

# STATISTICAL SUMMARY

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This annual report summarizes data on crude nonfuel mineral production<sup>1</sup> for the United States, its island possessions, and the Commonwealth of Puerto Rico.

Although crude mineral production may be measured at any of several stages of extraction and processing, the stage of measurement used in this annual report is what is termed “mine output.” This term refers to minerals or ores in the form in which they are first extracted from the ground, but customarily may include the output from auxiliary processing at or near the mines.

Because of inadequacies in the statistics available, some series deviate from the foregoing definition. For copper, gold, lead,

silver, tin, and zinc, the quantities shown are recorded on a mine basis (as the recoverable content of ore sold or treated). However, the values assigned to the quantities are based on the average selling price of refined metal, not the mine value. Mercury is measured as recovered metal and valued at the average New York price for the metal. Values shown are in current dollars, with no adjustments made to compensate for changes in the purchasing power of the dollar.

The annual total value of all nonfuel mineral production in the United States increased more than 4% to \$40.5 billion in 1997, with metals increasing slightly to \$13.1 billion and industrial minerals increasing over 6.4% to \$27.4 billion over that of 1996. Nine of the mineral commodities produced in the United States in 1997 had an individual total production value greater than \$1 billion. These commodities, in descending order, were stone (crushed), cement (portland), copper, sand and gravel (construction), gold, iron ore, lime, phosphate rock, and clays (kaolin). They composed over 78% of the U.S. total production. (*See table 1.*)

In 1997, 14 States produced nonfuel mineral commodities with individual total production values of greater than \$1 billion. These States, in descending order, were Arizona, Nevada, California, Florida, Texas, Georgia, Minnesota, Utah, Michigan, Missouri, Pennsylvania, Wyoming, Ohio, and New Mexico. They composed almost 64% of the U.S. total production. (*See table 3.*)

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<sup>1</sup>The terms “nonfuel mineral production” and related “values” encompass variations in meaning, depending on the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 1997 USGS mineral production data published in this chapter are as of December 1998. For some commodities (for example, construction sand and gravel, crushed stone, and portland cement), data are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Call MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset, and request Document # 1000 for a telephone listing of all mineral commodity specialists, or call USGS information at (703) 648-4000 for the specialist's name and number. This telephone listing may also be retrieved over the Internet at <http://minerals.usgs.gov/minerals/contacts/comdir.html>. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved by way of MINES FaxBack or over the Internet at <http://minerals.usgs.gov/minerals/pubs/>.

TABLE 1  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997		
	Quantity	Value	Quantity	Value	Quantity	Value	
<b>Metals:</b>							
Antimony 3/	metric tons	262	W	242	W	356	W
Beryllium concentrates	do.	5,040	6	5,260	6	5,760	6
Copper 4/		1,850	5,640,000	1,920	4,610,000	1,940	4,580,000
Gold 4/	kilograms	317,000	3,950,000	326,000 r/	4,090,000 r/	360,000	3,850,000
Iron ore, usable		61,100	1,730,000	62,200	1,770,000	62,800	1,890,000
Iron oxide pigments, crude	metric tons	51,700	6,720	44,700	6,990	46,900	7,580
Lead 4/	do.	386,000	359,000	426,000	459,000	448,000	460,000
Magnesium metal	do.	142,000	476,000	133,000	455,000	125,000	400,000
Molybdenum 3/	do.	W	W	57,900	456,000	59,100	W
Nickel ore	do.	1,560	W	1,330	W	(5/)	--
Palladium	kilograms	5,260	22,000	6,100	25,500	8,400	49,700
Platinum	do.	1,590	20,800	1,840	23,500	2,610	33,200
Rare-earth metal concentrates	metric tons	22,200	W	20,400	W	20,000 e/	W
Silver 4/	do.	1,560 r/	259,000	1,570	262,000 r/	2,150	338,000
Zinc 4/	do.	614,000	756,000	598,000 r/	674,000 r/	605,000	860,000
Combined value of bauxite, manganiferous ore, mercury, titanium concentrates, tungsten, vanadium, zircon concentrates and values indicated by symbol W		XX	812,000	XX	190,000	XX	614,000
Total metals		XX	14,000,000	XX	13,000,000 r/	XX	13,100,000
<b>Industrial minerals, excluding fuels:</b>							
Asbestos	metric tons	10,200	W	9,550	W	6,890	W
Barite		543	10,400	662	14,700	692	15,500
Boron minerals, B2O3		1,190	560,000	1,150	519,000	604 6/	580,000
Bromine	metric tons	218,000	186,000	227,000	150,000	247,000	198,000
<b>Cement:</b>							
Masonry		3,600	307,000	3,470	321,000 e/	3,630	339,000 e/
Portland		73,300	4,920,000	75,800	5,310,000 e/	78,900	5,710,000 e/
<b>Clays:</b>							
Ball		993	45,500	973	43,100	1,040	48,100
Bentonite		3,820	138,000	3,740	134,000	4,020	169,000
Common		25,600	151,000	26,200	144,000	24,500	149,000
Fire		583	12,800	505	10,700	649	9,450
Fuller's earth		2,640	269,000	2,600	278,000	2,370	255,000
Kaolin		9,480	1,110,000	9,120	1,100,000	9,410	1,040,000
Diatomite		687	171,000	698	176,000	766	184,000
Feldspar	metric tons	882,000	37,400	890,000	39,400	900,000	42,500
Fluorspar	do.	51,400	W	8,180	W	--	--
Garnet, industrial	do.	46,300 r/	3,850 r/	60,900 r/	5,630 r/	64,900	6,050
Gemstones		NA	48,700	NA	43,300 r/	NA	25,000
Gypsum, crude		16,600	121,000	17,500	124,000	18,600	132,000
<b>Helium:</b>							
Crude	million cubic meters	36	32,100	37	33,100	37	33,700
Grade-A	do.	99	196,000	97	193,000	104	206,000
Iodine	metric tons	1,220	12,500	1,270	14,600	1,320	19,600
Lime		18,500	1,100,000	19,200 r/	1,160,000 r/	19,600	1,200,000
Mica, crude		108	5,630	97	7,820	114	9,400
Peat		660	17,000	640	18,500	750	17,500
Perlite, crude	metric tons	700,000	21,600	684,000	21,300	706,000	23,300
Phosphate rock, marketable		43,500	947,000	45,400	1,060,000	45,900	1,080,000
Potash		2,880	284,000	2,960	299,000	3,000	320,000
Pumice and pumicite	metric tons	529,000	13,200	612,000	14,800	577,000	16,100
Salt		40,800	1,000,000	42,900	1,060,000	40,600	993,000
<b>Sand and gravel:</b>							
Construction		910,000	3,910,000	914,000	4,000,000	952,000	4,260,000
Industrial		28,200	502,000	27,800	497,000	28,500	518,000
Silica stone 7/	metric tons	374	W	410	4,050 r/	445	2,560

See footnotes at end of table.

TABLE 1--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
Industrial minerals, excluding fuels--Continued:						
Sodium compounds:						
Soda ash	10,100	829,000	10,200	926,000	10,700	915,000
Sodium sulfate, natural	327	27,700	306	27,200	318	34,700
Stone, crushed 8/	1,260,000	6,750,000	1,330,000	7,180,000	1,420,000	8,060,000
Sulfur, Frasch	3,070	207,000	W	W	W	W
Tripoli metric tons	80,100	10,500	79,600	18,400	81,300	16,400
Vermiculite, crude do.	171,000	W	W	W	W	W
Zeolites do.	46,800	NA	39,300	NA	30,100	NA
Combined value of brucite, emery, greensand marl, kyanite, lithium minerals, magnesite, magnesium compounds, olivine, staurolite, stone (dimension), talc and pyrophyllite, wollastonite and values indicated by symbol W	XX	626,000	XX	820,000 r/	XX	803,000
Total industrial minerals	XX	24,600,000	XX	25,800,000	XX	27,400,000
Grand total	XX	38,600,000	XX	38,800,000 r/	XX	40,500,000

e/ Estimated. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value." XX Not applicable.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Content of ore and concentrate.

4/ Recoverable content of ores, etc.

5/ The Nickel Mountain Mine reportedly was idle all of 1997 because of disappointing prices for nickel ore. However, the smelter operated at full capacity.

6/ Weight reported as B<sub>2</sub>O<sub>3</sub> and is not comparable to prior years.

7/ Includes grindstones, pulpstones, and sharpening stones; excludes mill liners and grinding pebbles.

8/ Excludes abrasive stone and bituminous limestone and sandstone; all included elsewhere in table.

TABLE 2  
NONFUEL MINERALS PRODUCED IN THE UNITED STATES, BY COMMODITY AND STATES IN 1997

(Based on quantity unless otherwise noted)

Mineral	Principal States	Other States
Antimony 1/	ID	
Asbestos	CA	
Barite	NV, GA, TN	
Beryllium concentrate	UT	
Boron, B <sub>2</sub> O <sub>3</sub>	CA	
Bromine	AR and MI	
Brucite	NV	
Cement:		
Masonry	IN, FL, AL, SC, PA	AZ, AR, CA, CO, GA, HI, ID, IA, KS, KY, ME, MD, MI, MO, MT, NE, NM, NY, OH, OK, OR, SD, TN, TX, VA, WA, WV.
Portland	CA, TX, PA, MI, MO	All other States, except AK, CT, DE, LA, MA, MN, NH, NJ, NC, ND, RI, VT, WI.
Clays:		
Ball	TN, KY, TX, MS, MO	
Bentonite	WY, MT, AL, MS, UT	AZ, CA, NV, OR, TX.
Common	AL, NC, TX, GA, OH	All other States, except AK, DE, HI, ID, NV, NH, RI, VT, WI.
Fire	OH, MO, CA, AL, KY	NM.
Fuller's earth	GA, MS, FL, IL, MO	CA, KS, NV, TN, TX, UT, VA.
Kaolin	GA, SC, AL, AR, CA	FL, NV, NC, PA, TN, TX,
Copper 1/	AZ, UT, NM, NV, MT	AK, ID, MO, TN, WI.
Diatomite	CA, NV, OR, WA	
Emery	OR	
Feldspar	NC, CA, VA, OK, GA	ID and SD.
Garnet, abrasive	ID, NY, MT	
Gemstones, natural 2/	TN, KY, AZ, CA, MT	All other States.
Gold 1/	NV, CA, UT, SD, AK	AZ, CO, ID, MT, NM, SC, WA, WI.
Greensand marl	NJ	
Gypsum, crude	OK, TX, IA, MI, CA	AZ, AR, CO, IN, KS, LA, NV, NM, NY, OH, SD, UT, VA, WA, WY.
Helium:		
Crude	KS, TX, OK	
Grade-A	KS, WY, TX, OK, UT	CO.
Iodine	OK	
Iron ore, usable	MN, MI, MO, SD, NM	CA.
Iron oxide pigments, crude	MI, GA, MO, AL, VA	AZ.
Kyanite	VA	
Lead 1/	MO, AK, ID, MT, CO	NY and TN.
Lime	MO, KY, OH, AL, PA	All other States, except AK, CT, DE, FL, HI, KS, ME, MD, MS, NH, NJ, NM, NY, NC, RI, SC, VT.
Lithium minerals	NV and NC	
Magnesite	NV	
Magnesium compounds	MI, CA, UT, FL, DE	TX.
Magnesium metal	TX, UT, WA	
Manganiferous ore	SC	
Mercury	NV, CA, UT	
Mica, crude	NC, GA, NM, SC, SD	
Molybdenum	CO, AZ, UT, ID, MT	NM.
Olivine	WA and NC	
Palladium metal	MT	
Peat	FL, MI, ME, IL, MN	CO, IN, IA, MA, MT, NJ, NY, NC, OH, PA, WA, WV, WI.
Perlite	NM, AZ, CA, OR, NV	
Phosphate rock	FL, ID, NC, UT	
Platinum metal	MT	
Potash, K <sub>2</sub> O	NM, UT, MI, CA	
Pumice and pumicite	OR, NM, CA, ID, AZ	KS.
Rare-earth metal concentrates	CA	
Salt	LA, TX, NY, KS, OH	AL, AZ, CA, MI, NV, NM, OK, UT, WV.
Sand and gravel:		
Construction	CA, MI, TX, OH, WA	All other States.
Industrial	IL, MI, CA, TX, WI	All other States, except AK, CT, DE, HI, KY, ME, NH, NM, OR, SD, UT, VT, WY.
Silica stone 3/	AR, WI, OH	
Silver 1/	NV, AK, ID, AZ, UT	CA, CO, MO, MT, NM, NY, SC, SD, TN, WA, WI.

See footnotes at end of table.

TABLE 2--Continued  
NONFUEL MINERALS PRODUCED IN THE UNITED STATES, BY COMMODITY AND STATES IN 1997

(Based on quantity unless otherwise noted)

Mineral	Principal States	Other States
Sodium compounds:		
Soda ash	WY and CA	
Sodium sulfate, natural	CA and TX	
Staurolite	FL	
Stone:		
Crushed	PA, TX, OH, FL, VA	All other States, except DE and ND.
Dimension	IN, VT, MA, WI, NM	All other States except AK, DE, FL, HI, IL, IA, KY, LA, MS, NE, NV, NJ, ND, OR, RI, UT, WY.
Sulfur, Frasch	LA and TX	
Talc and pyrophyllite	MT, TX, VT, NY, NC	CA, OR, VA.
Titanium concentrates:		
Ilmenite	FL and CA	
Rutile	FL	
Tripoli	IL, OK, AR, PA	
Vanadium 1/	ID	
Vermiculite, crude	SC and VA	
Wollastonite	NY	
Zeolites	NM, TX, OR, AZ, NV	WY.
Zinc 1/	AK, TN, NY, MO, MT	CO and ID.
Zircon concentrates	FL	

1/ Content of ores, etc.

2/ Principal producing States based on value.

3/ Includes grindstones, pulpstones, and sharpening stones; excludes mill liners and grinding pebbles.

TABLE 3  
VALUE OF NONFUEL MINERAL PRODUCTION IN THE UNITED STATES AND PRINCIPAL NONFUEL RAW MINERALS PRODUCED IN 1997 1/

State	Value (thousands)	Rank	Percent of U.S. total	Principal minerals, in order of value
Alabama	\$881,000	17	2.17	Cement (portland), stone (crushed), lime, sand and gravel (construction), cement (masonry).
Alaska	958,000	15	2.37	Zinc, gold, lead, silver, sand and gravel (construction).
Arizona	3,540,000	1	8.74	Copper, sand and gravel (construction), cement (portland), molybdenum, lime.
Arkansas	487,000	29	1.20	Bromine, stone (crushed), cement (portland), sand and gravel (construction), sand and gravel (industrial).
California	3,040,000	3	7.51	Cement (portland), sand and gravel (construction), boron (B <sub>2</sub> O <sub>3</sub> ), stone (crushed), gold.
Colorado	524,000	26	1.29	Sand and gravel (construction), cement (portland), molybdenum, gold, stone (crushed).
Connecticut 2/	80,200	45	0.20	Stone (crushed), sand and gravel (construction), stone (dimension), clays (common), gemstones.
Delaware 2/	12,400	50	0.03	Sand and gravel (construction), magnesium compounds, gemstones.
Florida	1,830,000	4	4.53	Phosphate rock, stone (crushed), cement (portland), sand and gravel (construction), zirconium concentrates.
Georgia	1,680,000	6	4.15	Clays (kaolin), stone (crushed), cement (portland), clays (fuller's earth), sand and gravel (construction).
Hawaii	93,700	43	0.23	Stone (crushed), cement (portland), sand and gravel (construction), cement (masonry), gemstones.
Idaho	469,000	31	1.16	Phosphates rock, gold, molybdenum, silver, sand and gravel (construction).
Illinois	829,000	18	2.05	Stone (crushed), cement (portland), sand and gravel (construction), sand and gravel (industrial), lime.
Indiana	670,000	21	1.65	Stone (crushed), cement (portland), sand and gravel (construction), lime, cement (masonry).
Iowa	486,000	30	1.20	Stone (crushed), cement (portland), sand and gravel (construction), gypsum (crude), lime.
Kansas	539,000	25	1.33	Cement (portland), salt, stone (crushed), helium (Grade-A), sand and gravel (construction).
Kentucky	498,000	28	1.23	Stone (crushed), lime, cement (portland), sand and gravel (construction), clays (ball).
Louisiana	402,000	32	0.99	Salt, sulfur (Frasch), sand and gravel (construction), stone (crushed), sand and gravel (industrial).
Maine	70,200	46	0.17	Sand and gravel (construction), cement (portland), stone (crushed), peat, cement (masonry).
Maryland	371,000	34	0.92	Stone (crushed), cement (portland), sand and gravel (construction), cement (masonry), stone (dimension).
Massachusetts	193,000	40	0.48	Stone (crushed), sand and gravel (construction), stone (dimension), lime, clays (common).
Michigan	1,660,000	9	4.10	Iron ore (usable), cement (portland), sand and gravel (construction), magnesium compounds, stone (crushed).
Minnesota	1,680,000	7	4.14	Iron ore (usable), sand and gravel (construction), stone (crushed), stone (dimension), sand and gravel (industrial), lime.
Mississippi	175,000	41	0.43	Sand and gravel (construction), cement (portland), stone (crushed), clays (fuller's earth), sand and gravel (industrial).
Missouri	1,310,000	10	3.23	Stone (crushed), lead, cement (portland), lime, zinc.
Montana	498,000	27	1.23	Gold, copper, cement (portland), palladium metal, molybdenum.
Nebraska	165,000	42	0.41	Cement (portland), sand and gravel (construction), stone (crushed), lime, clays (common).
Nevada	3,270,000	2	8.08	Gold, copper, silver, sand and gravel (construction), diatomite.
New Hampshire 2/	48,700	47	0.12	Sand and gravel (construction), stone (crushed), stone (dimension), gemstones.
New Jersey 2/	267,000	38	0.66	Stone (crushed), sand and gravel (construction), sand and gravel (industrial), greensand marl, peat.
New Mexico	1,040,000	14	2.56	Copper, potash (K <sub>2</sub> O), sand and gravel (construction), cement (portland), molybdenum.
New York	955,000	16	2.36	Stone (crushed), salt, cement (portland), sand and gravel (construction), zinc.
North Carolina	741,000	19	1.83	Stone (crushed), phosphate rock, sand and gravel (construction), sand and gravel (industrial), feldspar.
North Dakota	33,700	48	0.08	Sand and gravel (construction), lime, clays (common), sand and gravel (industrial), gemstones.
Ohio	1,040,000	13	2.57	Stone (crushed), sand and gravel (construction), salt, lime, cement (portland).
Oklahoma	386,000	33	0.95	Cement (portland), stone (crushed), sand and gravel (construction), sand and gravel (industrial), iodine (crude).
Oregon	285,000	37	0.70	Stone (crushed), sand and gravel (construction), cement (portland), lime, diatomite.
Pennsylvania	1,200,000	11	2.97	Stone (crushed), cement (portland), lime, sand and gravel (construction), cement (masonry).
Rhode Island 2/	27,200	49	0.07	Sand and gravel (construction), stone (crushed), sand and gravel (industrial), gemstones.
South Carolina	567,000	23	1.40	Stone (crushed), cement (portland), gold, cement (masonry), sand and gravel (construction).
South Dakota	328,000	36	0.81	Gold, cement (portland), sand and gravel (construction), stone (crushed), stone (dimension).
Tennessee	707,000	20	1.75	Stone (crushed), zinc, cement (portland), sand and gravel (construction), clays (ball).
Texas	1,790,000	5	4.43	Cement (portland), stone (crushed), sand and gravel (construction), magnesium metal, lime.
Utah	1,680,000	8	4.14	Copper, gold, magnesium metal, molybdenum, sand and gravel (construction).
Vermont 2/	83,500	44	0.21	Stone (crushed), stone (dimension), sand and gravel (construction), talc and pyrophyllite, gemstones.
Virginia	642,000	22	1.59	Stone (crushed), cement (portland), sand and gravel (construction), lime, kyanite.
Washington	555,000	24	1.37	Sand and gravel (construction), magnesium metal, cement (portland), stone (crushed), gold.
West Virginia	205,000	39	0.51	Stone (crushed), cement (portland), sand and gravel (construction), lime, salt.
Wisconsin	358,000	35	0.89	Stone (crushed), sand and gravel (construction), copper, lime, sand and gravel (industrial).
Wyoming	1,120,000	12	2.77	Soda ash, clays (bentonite), helium (Grade-A), cement (portland), stone (crushed).
Undistributed	30,100	XX	0.07	
Total	40,500,000	XX	100.00	

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Partial total; excludes values that must be concealed to avoid disclosing company proprietary data. Concealed values included with "Undistributed."

TABLE 4  
VALUE OF NONFUEL MINERAL PRODUCTION PER CAPITA AND PER SQUARE KILOMETER IN 1997, BY STATE 1/

State	Area (square kilometers)	Population (thousands)	Total value (thousands)	Per capita		Per square kilometer	
				Dollars	Rank	Dollars	Rank
Alabama	134,000	4,320	\$881,000	204	14	6,580	19
Alaska	1,530,000	609	958,000	1,570	3	626	49
Arizona	295,000	4,550	3,540,000	777	5	12,000	4
Arkansas	138,000	2,520	487,000	193	15	3,530	28
California	411,000	32,300	3,040,000	94	32	7,400	15
Colorado	270,000	3,890	524,000	135	20	1,940	42
Connecticut	13,000	3,270	80,200 2/	25	49	6,170	21
Delaware	5,290	732	12,400 2/	17	50	2,330	38
Florida	152,000	14,700	1,830,000	125	23	12,100	3
Georgia	153,000	7,490	1,680,000	224	12	11,000	6
Hawaii	16,800	1,190	93,700	79	37	5,590	24
Idaho	216,000	1,210	469,000	387	9	2,170	39
Illinois	146,000	11,900	829,000	70	39	5,680	23
Indiana	93,700	5,860	670,000	114	25	7,150	17
Iowa	146,000	2,850	486,000	171	16	3,340	30
Kansas	213,000	2,590	539,000	208	13	2,530	36
Kentucky	105,000	3,910	498,000	127	22	4,760	26
Louisiana	124,000	4,350	402,000	92	34	3,250	32
Maine	86,200	1,240	70,200	57	42	815	48
Maryland	27,100	5,090	371,000	73	38	13,700	1
Massachusetts	21,500	6,120	193,000	32	47	8,980	10
Michigan	152,000	9,770	1,660,000	170	17	10,900	7
Minnesota	219,000	4,690	1,680,000	358	10	7,670	12
Mississippi	124,000	2,730	175,000	64	41	1,420	44
Missouri	181,000	5,400	1,310,000	242	11	7,240	16
Montana	381,000	879	498,000	567	7	1,310	45
Nebraska	200,000	1,660	165,000	100	28	825	47
Nevada	286,000	1,680	3,270,000	1,950	2	11,400	5
New Hampshire	24,000	1,170	48,700 2/	42	45	2,020	41
New Jersey	20,200	8,050	267,000 2/	33	46	13,200	2
New Mexico	315,000	1,730	1,040,000	600	6	3,290	31
New York	127,000	18,100	955,000	53	43	7,510	14
North Carolina	136,000	7,430	741,000	100	29	5,430	25
North Dakota	183,000	641	33,700	53	44	184	50
Ohio	107,000	11,200	1,040,000	93	33	9,730	9
Oklahoma	181,000	3,320	386,000	116	24	2,130	40
Oregon	251,000	3,240	285,000	88	36	1,130	46
Pennsylvania	117,000	12,000	1,200,000	100	27	10,200	8
Rhode Island	3,140	987	27,200 2/	28	48	8,670	11
South Carolina	80,600	3,760	567,000	151	18	7,030	18
South Dakota	200,000	738	328,000	445	8	1,640	43
Tennessee	109,000	5,370	707,000	132	21	6,480	20
Texas	691,000	19,400	1,790,000	92	35	2,590	35
Utah	220,000	2,060	1,680,000	814	4	7,630	13
Vermont	24,900	589	83,500 2/	142	19	3,350	29
Virginia	106,000	6,730	642,000	95	31	6,080	22
Washington	176,000	5,610	555,000	99	30	3,150	34
West Virginia	62,800	1,820	205,000	113	26	3,270	33
Wisconsin	145,000	5,170	358,000	69	40	2,460	37
Wyoming	253,000	480	1,120,000	2,340	1	4,430	27
Undistributed	XX	XX	30,100	XX	XX	XX	XX
Total or average	9,370,000 3/	267,000 3/	40,500,000	152	XX	4,320	XX

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Partial total; excludes values that must be concealed to avoid disclosing company proprietary data. Concealed values included with "Undistributed."

3/ Excludes Washington, DC (which has no mineral production), with an area of 179 square kilometers and a population of 529,000.

Sources: U.S. Geological Survey and Bureau of the Census.

TABLE 5  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Alabama:</b>						
<b>Cement:</b>						
Masonry	306	30,700	309	32,000 e/	346	36,200 e/
Portland	4,090	285,000	4,330	326,000 e/	4,280	344,000 e/
<b>Clays:</b>						
Bentonite	154	4,700	166	5,060	W	W
Common	2,080	18,600	2,290	17,100	2,590	25,400
Fire	80	3,120	52	2,800	W	W
Kaolin	373	7,220	254	W	W	W
Gemstones	NA	3,000	NA	2,000	NA	860
Lime	1,730	105,000	1,860	116,000	1,830	115,000
<b>Sand and gravel:</b>						
Construction	11,900	49,400	13,800	60,600	13,400	58,800
Industrial	479	5,940	799	8,380	734	9,730
Stone, crushed	33,600	174,000	38,900	198,000	42,000	273,000
Combined value of bauxite (1995), iron oxide pigments (crude, 1997), salt, stone (dimension limestone and sandstone), and values indicated by symbol W	XX	6,810	XX	9,930	XX	17,600
Total	XX	693,000	XX	778,000	XX	881,000
<b>Alaska:</b>						
Gemstones	NA	10	NA	11	NA	11
Gold 3/ 4/ kilograms	4,410	56,000	5,020	61,000	16,300 p/	174,000 p/
Sand and gravel, construction	13,700	48,500	9,380	35,900	12,500	57,400
Silver 3/ metric tons	109	18,100	W	W	W	W
Stone, crushed 5/ r/	2,430	14,500	2,600	16,500	3,340	23,500
Zinc 3/ metric tons	321,000	395,000	W	W	W	W
Combined values of copper (1996-97), lead, stone (crushed dolomite and limestone), and values indicated by symbol W	XX	(6/)	XX	500,000 r/	XX	703,000
Total	XX	532,000 r/ 7/	XX	613,000	XX	958,000
<b>Arizona:</b>						
<b>Clays:</b>						
Bentonite	21	W	W	W	W	W
Common	98	449	104	W	W	W
Copper 3/	1,170	3,560,000	1,240	2,980,000 r/	1,250	2,940,000
Gemstones	NA	3,230	NA	2,360	NA	2,360
Gold 3/ kilograms	1,920	23,900	2,990 r/	37,500 r/	2,140	22,800
Iron oxide pigments, crude metric tons	68	90	W	W	W	W
Molybdenum do.	W	W	W	W	14,400	W
<b>Sand and gravel:</b>						
Construction	40,100	201,000	41,900	199,000	39,500	187,000
Industrial	334	2,910	323	2,890	330	3,160
Silver 3/ metric tons	220	36,400	189 r/	31,500 r/	190	29,900
Stone, crushed	5,520	32,600	6,800	40,600	7,490	44,000
Combined value of cement, gypsum (crude), lime, perlite (crude), pumice and pumicite, salt, stone (dimension sandstone), and values indicated by symbol W	XX	331,000	XX	308,000	XX	312,000
Total	XX	4,190,000	XX	3,600,000 r/	XX	3,540,000
<b>Arkansas:</b>						
<b>Clays:</b>						
Common	973	2,920	939	2,390	979	1,400
Kaolin	182	4,890	161	W	W	W
Gemstones	NA	4,890	NA	3,050	NA	980
Sand and gravel, construction	11,600	48,300	11,000	43,500	10,600	48,100
Silica stone 8/ metric tons	W	W	398	4,040 r/	424	2,540
<b>Stone:</b>						
Crushed	25,500	169,000	26,400	158,000	28,100	167,000
Dimension metric tons	22,000	2,010	W	W	W	W

See footnotes at end of table.



TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
Arkansas--Continued:						
Combined value of bromine, cement, clays [fire (1995-96)], gypsum (crude), lime, sand and gravel (industrial), stone [dimension limestone, marble, and sandstone (1996-97)], tripoli, and values indicated by symbol W	XX	260,000	XX	225,000	XX	267,000
Total	XX	492,000	XX	435,000 r/	XX	487,000
California:						
Asbestos metric tons	10,200	W	9,550	W	6,890	W
Boron minerals	1,190	560,000	1,150	519,000	604 9/	580,000
Cement:						
Masonry	154	11,200	198	14,500 e/	169	13,500 e/
Portland	9,360	565,000	9,910	616,000 e/	10,300	705,000 e/
Clays:						
Bentonite	149	14,000	148	13,900	29	3,420
Common	1,420	14,500	1,340	12,600	937	10,300
Fire	11	311	60	W	W	W
Fuller's earth	224	W	224	W	W	W
Kaolin	W	W	W	W	75	W
Diatomite	318	W	W	W	W	W
Gemstones	NA	490	NA	507	NA	1,330
Gold 3/ kilograms	25,600	319,000	24,200 r/	304,000 r/	24,400	261,000
Lime	228	15,600	208	19,200 r/	200	20,300
Rare-earth metal concentrates metric tons	22,200	W	20,400	W	20,000 e/	W
Sand and gravel:						
Construction	98,400	542,000	103,000	583,000	115,000	668,000
Industrial	1,710	38,300	1,760	40,500	1,920	44,900
Silver 3/ metric tons	14	2,240	22	3,610	23	3,550
Stone:						
Crushed	43,700 5/	268,000 5/	46,700	295,000	49,600	325,000
Dimension metric tons	27,300	6,660	28,600	7,020	26,200	4,300
Combined value of feldspar, gypsum (crude), iron ore (usable), magnesium compounds, mercury, perlite (crude), potash, pumice and pumicite, salt, soda ash, sodium sulfate (natural), stone [crushed dolomite and shell (1995)], talc and pyrophyllite, titanium concentrates [ilmenite (1996-97)], tungsten (1995), and values indicated by symbol W	XX	399,000	XX	409,000 r/	XX	401,000
Total	XX	2,760,000	XX	2,840,000 r/	XX	3,040,000
Colorado:						
Clays:						
Bentonite	(10/)	9	1	19	--	--
Common	288	2,040	317	2,320	258	1,970
Kaolin	6	W	6	W	--	--
Gemstones	NA	245	NA	754	NA	254
Lime	W	W	W	W	30	1,850
Sand and gravel, construction	34,100	141,000	31,600	133,000	32,100	142,000
Silver 3/ metric tons	W	W	7	1,240	W	W
Stone:						
Crushed	9,000	58,500	9,940	64,900	9,720	60,800
Dimension metric tons	17,800	2,640	23,900	3,330	10,800	3,250
Combined value of cement, gold, gypsum (crude), helium (Grade-A), lead, molybdenum, peat, sand and gravel (industrial), zinc, and values indicated by symbol W	XX	366,000	XX	308,000	XX	313,000
Total	XX	570,000	XX	513,000	XX	524,000
Connecticut:						
Clays, common	W	W	W	W	48	90
Gemstones	NA	5	NA	5	NA	5
Sand and gravel, construction	6,410	37,500	6,380	26,900	5,410	24,800
Stone, crushed	6,070 5/	45,500 5/	6,720	55,000	5,760	55,300

See footnotes at end of table.

TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
Connecticut--Continued:						
Combined value of other industrial minerals	XX	9,470	XX	(6/)	XX	(6/)
Total	XX	92,500	XX	81,900 7/	XX	80,200 7/
Delaware:						
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	2,680	8,740	2,370	6,820	2,540	12,400
Total 3/	XX	8,750	XX	6,820	XX	12,400
Florida:						
Cement:						
Masonry	383	35,200	422	35,200 e/	406	36,200 e/
Portland	3,170	233,000	3,450	245,000 e/	3,750	274,000 e/
Clays:						
Fuller's earth	388	50,800	377	58,900	W	W
Kaolin	33	3,510	35	3,760	W	W
Gemstones	NA	W	NA	1	NA	1
Peat	294	5,390	298	5,550	361	5,710
Sand and gravel:						
Construction	19,300	69,300	18,500	68,800	19,200	75,500
Industrial	547	6,340	515	6,340	507	5,800
Stone, crushed	68,000	350,000	73,600 5/	394,000 5/	73,800 5/	396,000 5/
Combined value of clays (common), magnesium compounds, phosphate rock, staurolite, stone [crushed marl (1996-97)], titanium concentrates, zirconium concentrates, and values indicated by symbol W	XX	783,000	XX	947,000	XX	1,040,000
Total	XX	1,540,000	XX	1,760,000	XX	1,830,000
Georgia:						
Clays:						
Common	1,660	11,200	1,660	11,200	1,820	11,600
Fuller's earth	744	90,100	739	89,200	576	70,500
Kaolin	8,240	1,060,000	8,040	1,050,000	8,300	981,000
Gemstones	NA	51	NA	32	NA	8
Sand and gravel:						
Construction	5,780	23,100	6,520	24,500	6,410	24,600
Industrial	574	7,060	313	5,650	520	9,330
Stone:						
Crushed	60,600	373,000	63,400 5/	401,000 5/	65,300 5/	429,000 5/
Dimension metric tons	132,000	27,700	89,600 5/	10,300 5/	68,700 5/	9,810 5/
Combined value of barite, bauxite (1995), cement, feldspar, iron oxide pigments (crude), lime, mica (crude), and stone [crushed marble (1996-97), dimension marble (1996-97)]	XX	102,000	XX	148,000	XX	144,000
Total	XX	1,690,000	XX	1,740,000	XX	1,680,000
Hawaii:						
Cement:						
Masonry	5	501	5	500 e/	3	332 e/
Portland	357	35,500	312	32,000 e/	252	29,600 e/
Gemstones	NA	W	NA	153	NA	66
Sand and gravel, construction	405	4,030	W	W	378	4,210
Stone, crushed	7,450 5/	73,500 5/	6,560	77,500	5,560	59,500
Total	XX	114,000 7/	XX	110,000 7/	XX	93,700
Idaho:						
Antimony metric tons	262	W	242	W	356	W
Clays, common	1	10	--	--	--	--
Gemstones	NA	346	NA	347	NA	687
Gold 3/ kilograms	8,850	110,000	10,800	136,000 r/	7,490	80,100
Pumice and pumicite metric tons	W	W	159,000	1,340	83,100	758
Sand and gravel:						
Construction	13,200	43,500	14,700	46,100	14,800	42,700
Industrial	501	8,720	646	8,510	630	7,950
Silver 3/ metric tons	182	30,200	234 r/	39,000 r/	341	53,800

See footnotes at end of table.

TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Idaho--Continued:</b>						
Stone, crushed 5/	3,210	14,000	3,960	20,200	3,910	18,700
Combined value of cement, copper, feldspar, garnet (industrial), lead, lime, molybdenum, phosphate rock, stone [crushed quartzite (1997), crushed miscellaneous (1995-96), dimension quartzite (1995), dimension quartzite and miscellaneous (1996-97)], vanadium, zinc, and values indicated by symbol W	XX	299,000 r/	XX	249,000 r/	XX	264,000
Total	XX	506,000 r/	XX	500,000 r/	XX	469,000
<b>Illinois:</b>						
Cement, portland	2,560	169,000	2,620	181,000 e/	2,590	186,000 e/
Clays:						
Common	503	1,220	115	736	100	533
Fuller's earth	332	W	330	W	W	W
Fluorspar metric tons	51,400	W	8,180	W	--	--
Gemstones	NA	269	NA	890	NA	8
Sand and gravel:						
Construction	36,100	147,000	34,600	144,000	33,400	143,000
Industrial	4,410	67,500	4,460	66,400	4,610	67,900
Stone, crushed	61,400	335,000	66,500	364,000	65,700	357,000
Combined value of barite (1995), copper (1995-96), lead (1995-96), lime, peat, silver (1995-96), tripoli, zinc (1995-96), and values indicated by symbol W	XX	107,000	XX	89,100	XX	73,600
Total	XX	828,000	XX	846,000	XX	829,000
<b>Indiana:</b>						
Cement, portland	2,330	143,000	2,350	153,000 e/	2,400	168,000 e/
Clays:						
Ball	38	W	38	W	--	--
Common	877	3,350	1,510	3,500	947	2,040
Gemstones	NA	36	NA	3	NA	3
Peat	17	281	W	W	W	W
Sand and gravel, construction	24,900	93,900	24,800	100,000	21,900	93,100
Stone:						
Crushed	49,200	234,000 5/	53,700 5/	254,000 5/	59,000 5/	280,000 5/
Dimension metric tons	172,000	31,400	156,000 5/	24,500 5/	190,000 5/	24,900 5/
Combined value of cement (masonry), gypsum (crude), lime, sand and gravel (industrial), stone [crushed slate, dimension dolomite (1996-97)], and values indicated by symbol W	XX	82,700	XX	92,800	XX	101,000
Total	XX	589,000	XX	628,000	XX	670,000
<b>Iowa:</b>						
Cement, portland	2,340	161,000	2,390	177,000 r/ e/	2,550	195,000 e/
Clays, common	322	1,590	478	1,180	287	976
Gemstones	NA	57	NA	481	NA	91
Gypsum, crude	2,240	13,800	2,090	12,800	2,080	12,200
Peat	5	77	W	W	W	W
Sand and gravel, construction	14,300	57,000	13,300	54,600	12,600	51,300
Stone, crushed	35,300	210,000	34,400	202,000	37,300	215,000
Combined value of cement (masonry), lime, sand and gravel (industrial), stone [dimension dolomite and sandstone (1995)], and values indicated by symbol W	XX	12,500	XX	11,100	XX	12,500
Total	XX	456,000	XX	460,000 r/	XX	486,000
<b>Kansas:</b>						
Cement:						
Masonry	31	2,650	24	2,240 e/	W	W
Portland	1,730	109,000	1,730	120,000 e/	1,690	122,000 e/
Clays:						
Common	573	2,390	548	2,250	545	2,500
Fuller's earth	48	W	64	W	W	W

See footnotes at end of table.

TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Kansas--Continued:</b>						
Gemstones	NA	W	NA	621	NA	291
<b>Helium:</b>						
Crude million cubic meters	30	26,600	W	W	W	W
Grade-A do.	53	105,000	53	104,000	51	101,000
Salt	2,770	113,000	2,950	118,000	3,210	120,000
Sand and gravel, construction	11,100	29,400	11,500	31,300	11,200	31,600
<b>Stone:</b>						
Crushed	20,400	95,800	22,100	110,000	23,000	116,000
Dimension 5/ metric tons	19,800	1,810	21,400	2,100	21,000	1,710
Combined value of gypsum (crude), pumice and pumicite, sand and gravel (industrial), stone (dimension sandstone), and values indicated by symbol W	XX	12,200	XX	40,600	XX	44,200
Total	XX	498,000	XX	530,000	XX	539,000
<b>Kentucky:</b>						
<b>Clays:</b>						
Ball	117	W	70	W	W	W
Common	786	3,430	823	3,680	865	3,910
Fire	--	--	--	--	7	W
Gemstones	NA	6,380	NA	5,910	NA	3,520
Sand and gravel, construction	8,710	31,700	7,310	25,600	8,140	26,600
Stone, crushed 5/	54,700	230,000	58,500	243,000	62,800	292,000
Combined value of cement, lime, stone [crushed (1995), crushed sandstone (1996-97)], and values indicated by symbol W	XX	161,000 r/	XX	164,000	XX	172,000
Total	XX	432,000	XX	442,000	XX	498,000
<b>Louisiana:</b>						
Clays, common	384	548	382	548	556	9,060
Gemstones	NA	175	NA	136	NA	15
Salt	14,700	177,000	15,500	175,000	15,300	169,000
<b>Sand and gravel:</b>						
Construction	11,300	50,200	11,500	53,200	10,400	46,600
Industrial	572	10,500	706	12,100	644	11,200
Stone, crushed 5/	2,540	26,700	2,290	23,900	4,870	32,200
Combined value of gypsum (crude), lime, stone [crushed limestone (1997), crushed shell and miscellaneous (1995), crushed miscellaneous (1996)], and sulfur (Frasch)	XX	169,000 r/	XX	128,000	XX	137,000
Total	XX	434,000	XX	393,000	XX	405,000
<b>Maine:</b>						
Gemstones	NA	305	NA	223	NA	230
Peat	15	845	18	960	W	W
Sand and gravel, construction	6,420	26,900	6,440	27,500	6,280	28,400
Stone, crushed	3,110	16,100	2,760	14,800	2,540	15,100
Combined value of cement, clays (common), stone (dimension granite), and value indicated by symbol W	XX	23,500	XX	25,000	XX	26,500
Total	XX	67,600	XX	68,600	XX	70,200
<b>Maryland:</b>						
Cement, portland	1,670	101,000	1,610	99,400 e/	1,790	115,000 e/
Clays, common	278	943	304	874	287	1,010
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	9,700	61,700	9,700	61,400	10,100	65,400
<b>Stone:</b>						
Crushed	24,200	158,000	22,400 5/	142,000 5/	24,500	160,000
Dimension metric tons	20,700	2,260	19,800	2,210	21,500	2,440
Combined value of other industrial minerals	XX	(6/)	XX	26,000	XX	28,200
Total	XX	324,000 7/	XX	332,000	XX	371,000
<b>Massachusetts:</b>						
Clays, common	31	W	W	W	W	W

See footnotes at end of table.

TABLE 5--Continued

## NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Massachusetts--Continued:</b>						
Gemstones	NA	W	NA	1	NA	1
Sand and gravel, construction	11,700	67,500	14,200	82,500	13,500	71,500
Stone:						
Crushed	11,100	97,400	11,800 5/	91,600 5/	12,200 5/	91,300 5/
Dimension metric tons	77,600	14,600	79,600	15,000	101,000	18,200
Combined value of lime, peat, sand and gravel [industrial (1996-97)], stone [crushed miscellaneous (1996-97)], and values indicated by symbol W	XX	10,700	XX	11,100	XX	11,700
Total	XX	190,000	XX	200,000	XX	193,000
<b>Michigan:</b>						
Cement:						
Masonry	229	16,700	232	20,400 e/	289	23,800 e/
Portland	5,400	361,000	5,390	397,000 e/	5,700	422,000 e/
Clays, common	623	3,430	652	3,410	712	3,750
Gemstones	NA	2	NA	1	NA	1
Gypsum, crude	1,510	14,900	1,590	14,400	1,920	17,300
Iron ore, usable	13,500	W	W	W	W	W
Lime	653	34,600	785 r/	42,700 r/	802	42,600
Peat	173	5,510	168	4,650	176	4,990
Sand and gravel:						
Construction	53,500	178,000	53,800	197,000	62,000	223,000
Industrial	2,940	30,600	2,680	29,400	2,680	30,000
Stone, crushed	37,500	127,000	38,600 5/	144,000 5/	42,000 5/	157,000 5/
Combined values of bromine, copper (1995), iron oxide pigments (crude), magnesium compounds, potash, salt, silver (1995), stone [crushed granite and miscellaneous (1996-97), dimension dolomite and sandstone], and values indicated by symbol W	XX	750,000	XX	695,000	XX	734,000
Total	XX	1,520,000	XX	1,550,000 r/	XX	1,660,000
<b>Minnesota:</b>						
Clays:						
Common	27	W	11	W	W	W
Kaolin	21	W	--	--	--	--
Gemstones	NA	26	NA	148	NA	5
Iron ore, usable	47,000	1,330,000	46,800 r/	1,330,000	47,900	1,430,000
Peat	24	2,070	20	1,540	29	1,500
Sand and gravel, construction	31,900	99,400	31,800	107,000	34,500	127,000
Stone:						
Crushed	11,300 5/	47,400 5/	12,100	59,000	14,600	75,000
Dimension metric tons	26,900	11,100	25,400	10,700	35,000	18,300
Combined value of lime, sand and gravel (industrial), stone [crushed quartzite and traprock (1995)], and values indicated by symbol W	XX	40,400	XX	35,100	XX	23,900
Total	XX	1,530,000	XX	1,540,000	XX	1,680,000
<b>Mississippi:</b>						
Clays:						
Ball	73	4,540	73	4,540	W	W
Bentonite	164	6,510	145	4,480	W	W
Common	616	6,080	534	3,610	502	3,500
Fuller's earth	378	26,900	379	27,800	388	28,100
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	11,800	53,000	13,400	60,600	13,000	59,600
Stone, crushed 5/	1,990	8,010	2,180	9,300	5,180	32,900
Combined value of cement (portland), sand and gravel (industrial), stone (crushed marl), and values indicated by symbol W	XX	25,500	XX	33,500	XX	51,300
Total	XX	131,000	XX	144,000	XX	175,000

See footnotes at end of table.

TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Missouri:</b>						
Cement, portland	4,360	270,000	4,530	293,000 e/	4,730	321,000 e/
Clays						
Ball	--	--	13	W	W	W
Common	972	4,810	849	3,250	1,050	4,140
Fire	359	5,480	223	3,220	291	4,270
Fuller's earth	283	W	283	W	W	W
Copper 3/	7	22,800	W	W	8	19,300
Gemstones	NA	58	NA	108	NA	W
Sand and gravel, construction	8,840	32,400	9,820	35,600	9,530	35,600
Stone, crushed	65,700 5/	305,000 5/	67,000	325,000	68,500	350,000
Combined value of barite (1995-96), cement (masonry), iron ore (usable), iron oxide pigments (crude), lead, lime, sand and gravel (industrial), silver, stone [crushed granite (1995), dimension granite], zinc, and values indicated by symbol W	XX	495,000	XX	591,000 r/	XX	573,000
Total	XX	1,140,000	XX	1,250,000 r/	XX	1,310,000
<b>Montana:</b>						
Clays, common	33	90	34	W	W	W
Gemstones	NA	938	NA	1,840	NA	1,120
Gold 3/ kilograms	12,400	155,000	9,440 r/	118,000 r/	10,200	109,000
Iron ore, usable	5	60	W	W	--	--
Lead 3/ metric tons	8,350	7,790	7,970	8,580	9,230	9,470
Palladium kilograms	5,260	22,000	6,100	25,500	8,400	49,700
Platinum do.	1,590	20,800	1,840	23,500	2,610	33,200
Sand and gravel, construction	8,870	34,900	9,260	35,800	8,390	30,800
Silver 3/ metric tons	77	12,700	W	W	W	W
Stone, crushed	2,370 5/	9,920 5/	2,000	8,580	2,600	10,600
Zinc 3/ metric tons	22,700	27,900	19,400	21,900	W	W
Combined value of cement, clays [bentonite, fire (1995-96)], copper, garnet [industrial (1996-97)], lime, molybdenum, peat, sand and gravel (industrial), stone [crushed quartzite (1995), dimension miscellaneous], talc and pyrophyllite, and values indicated by symbol W	XX	283,000	XX	252,000 r/	XX	254,000
Total	XX	574,000	XX	496,000 r/	XX	498,000
<b>Nebraska:</b>						
Clays, common	232	1,130	277	1,140	279	1,090
Gemstones	NA	W	NA	3	NA	3
Lime	20	803	13	1,060 r/	17	1,360
Sand and gravel, construction	13,700	47,100	12,900	44,300	13,700	46,700
Stone, crushed	6,590	41,800	6,370	39,800	6,900	46,000
Combined value of cement, sand and gravel (industrial), and value indicated by symbol W	XX	55,500	XX	62,100	XX	70,100
Total	XX	146,000	XX	148,000	XX	165,000
<b>Nevada:</b>						
Clays:						
Bentonite	6	477	6	580	W	W
Kaolin	W	W	25	W	W	W
Copper 3/	6	19,800	W	W	W	W
Gemstones	NA	306	NA	234	NA	474
Gold 3/ kilograms	210,000	2,620,000	215,000 r/	2,700,000 r/	243,000	2,600,000
Sand and gravel, construction	22,500	110,000	22,400	113,000	23,600	110,000
Silver 3/ metric tons	693	115,000	594 r/	99,100 r/	866	136,000
Stone, crushed	2,410	21,400	3,080	25,200	5,150	41,800
Combined value of barite, brucite, cement (portland), clays (fuller's earth), diatomite, gypsum (crude), lime, lithium minerals, magnesite, mercury, perlite (crude), salt, sand and gravel (industrial), and values indicated by symbol W	XX	180,000	XX	315,000 r/	XX	383,000
Total	XX	3,060,000	XX	3,250,000 r/	XX	3,270,000

See footnotes at end of table.

TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
New Hampshire:						
Clays, common	3	16	3	16	--	--
Gemstones	NA	9	NA	6	NA	6
Sand and gravel, construction	7,190	34,300	7,620	36,500	8,440	36,400
Stone:						
Crushed 5/ Dimension metric tons	2,150	9,150	1,430	8,650	1,970	12,300
Total 7/	XX	49,800	XX	51,700	XX	48,700
New Jersey:						
Clays, common	82	135	74	125	W	131
Gemstones	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	14,000	80,300	13,200	70,400	16,100	85,300
Industrial	1,760	31,000	1,680	30,300	1,530	28,300
Stone, crushed	21,000	132,000	21,400	145,000	22,800	153,000
Total 7/	XX	243,000	XX	246,000	XX	267,000
New Mexico:						
Clays:						
Common	127	274	32	165	32	168
Fire	W	W	W	W	1	17
Copper 3/	250	764,000	256	614,000	259	612,000
Gemstones	NA	22	NA	54	NA	W
Potash	2,330	209,000	2,430	225,000	W	W
Pumice and pumicite metric tons	W	W	102,000	527	W	W
Sand and gravel, construction	10,400	50,700	9,880	48,500	9,390	46,600
Silver 3/ metric tons	20	3,300	W	W	W	W
Stone, crushed	3,660	18,800	3,480 5/	18,800 5/	2,920 5/	15,700 5/
Combined value of cement [masonry (1997), portland], gold, gypsum (crude) iron ore (usable), mica (crude), molybdenum, perlite (crude), salt, stone [crushed quartzite and traprock (1996), crushed traprock (1997), dimension granite and marble], and values indicated symbol W	XX	83,900	XX	85,100 r/	XX	363,000
Total	XX	1,130,000	XX	992,000	XX	1,040,000
New York:						
Cement:						
Masonry	90	7,210	W	W	W	W
Portland	2,530	205,000	2,570	157,000 e/	W	W
Clays, common	563	12,500	652	14,000	477	12,100
Gemstones	NA	W	NA	291	NA	70
Salt	4,480	185,000	4,420	203,000	3,590	183,000
Sand and gravel, construction	27,300	134,000	28,100	145,000	28,500	144,000
Stone:						
Crushed	39,500	204,000	43,600	233,000	44,400	285,000
Dimension metric tons	32,800	8,440	34,400	8,120	54,700	9,380
Combined value of garnet (industrial), gypsum (crude), lead, peat, sand and gravel (industrial), silver, talc and pyrophyllite, wollastonite, zinc, and values indicated by symbol W	XX	128,000 r/	XX	128,000 r/	XX	321,000
Total	XX	883,000 r/	XX	889,000 r/	XX	955,000
North Carolina:						
Clays, common	2,430	12,500	2,400	12,400	2,460	11,900
Feldspar metric tons	497,000	18,400	481,000	18,400	467,000	18,700
Gemstones	NA	4,440	NA	348 r/	NA	368
Mica, crude	74	3,690	62	4,900	W	W
Peat	19	340	15	311	W	W
Sand and gravel:						
Construction	10,100	50,100	10,000	50,500	11,100	61,200
Industrial	1,330	21,900	1,500	21,700	1,600	26,400

See footnotes at end of table.

TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>North Carolina--Continued:</b>						
Stone:						
Crushed	57,300	384,000	57,200	394,000	63,700	464,000
Dimension metric tons	41,100 5/	15,400 5/	37,300	14,300	39,300	15,300
Combined value of clays (kaolin), lithium minerals, olivine, phosphate rock, stone [dimension quartzite, sandstone, slate and miscellaneous (1995)], talc and pyrophyllite, and values indicated by symbol W	XX	225,000	XX	172,000	XX	143,000
Total	XX	735,000	XX	689,000 r/	XX	741,000
<b>North Dakota:</b>						
Clays, common	59	W	59	W	56	W
Gemstones	NA	W	NA	3	NA	3
Sand and gravel, construction	8,420	23,900	8,320	23,800	9,360	26,800
Combine value of lime, peat (1995-96), sand and gravel (industrial), and values indicated by symbol W	XX	7,300	XX	7,060	XX	6,890
Total	XX	31,200	XX	30,800	XX	33,700
<b>Ohio:</b>						
Cement, portland	1,050	72,700	W	W	1,040	76,900
Clays:						
Common	1,840	7,560	1,960	7,450	1,210	5,600
Fire	89	3,140	103	3,230	301	4,310
Gemstones	NA	3	NA	153	NA	3
Lime	1,920	117,000	1,950 r/	105,000 r/	1,960	111,000
Sand and gravel:						
Construction	45,300	196,000	46,600	215,000	47,000	222,000
Industrial	1,270	28,800	1,270	29,800	1,140	28,600
Stone:						
Crushed	60,900	265,000	63,600	291,000	74,100	397,000
Dimension metric tons	17,900	1,670	19,800	2,060	24,600	3,240
Combined value of cement (masonry), gypsum (crude), peat, salt, silica stone (1996-97), and values indicated by symbol W	XX	200,000	XX	314,000	XX	193,000
Total	XX	891,000	XX	966,000 r/	XX	1,040,000
<b>Oklahoma:</b>						
Cement:						
Masonry	95	7,250	101	8,850 e/	89	6,500 e/
Portland	1,740	110,000	1,750	118,000 e/	1,900	132,000 e/
Clays:						
Common	674	3,580	799	4,090	653	4,430
Fire	--	--	23	W	--	--
Gemstones	NA	W	NA	603	NA	354
Gypsum, crude	2,830	17,000	2,690	16,500	3,100	17,500
Iodine, crude metric tons	1,210	12,500	1,270	14,600	1,320	19,600
Sand and gravel:						
Construction	7,800	25,100	7,910	27,700	8,250	29,000
Industrial	1,250	25,400	1,350	27,200	1,380	28,200
Stone:						
Crushed 5/	31,100	125,000	28,300	117,000	31,900	112,000
Dimension metric tons	9,170 5/	2,350 5/	9,710	2,220	5,770	995
Combined value of feldspar, helium [crude, Grade-A (1996-97)], lime, salt, stone [crushed shell and traprock (1995-96), crushed shell, traprock and miscellaneous (1997), dimension quartzite and sandstone (1995)], tripoli, and values indicated by symbol W	XX	28,700	XX	32,300	XX	35,800
Total	XX	357,000	XX	369,000	XX	386,000
<b>Oregon:</b>						
Clays:						
Bentonite	17	917	33	1,530	W	W
Common	222	354	213	154	W	W

See footnotes at end of table.



TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
Oregon--Continued:						
Gemstones	NA	4,570	NA	6,730	NA	980
Nickel ore metric tons	1,560	W	1,330	W	-- 11/	--
Sand and gravel, construction	18,200	85,000	18,300	86,800	19,100	100,000
Stone, crushed	20,700	95,700	22,000	102,000	21,200	110,000
Talc and pyrophyllite metric tons	W	W	64	84	W	W
Combine value of cement [masonry (1997), portland], diatomite, emery, lime, perlite [crude (1997)], pumice and pumicite, and values indicated by symbol W	XX	52,500	XX	68,700 r/	XX	74,100
Total	XX	239,000	XX	266,000 r/	XX	285,000
Pennsylvania:						
Cement:						
Masonry	267	21,200	274	28,000 e/	296	31,000 e/
Portland	5,610	355,000	5,670	418,000 e/	6,360	420,000 e/
Clays:						
Common	736	2,430	753	2,420	839	2,740
Kaolin	14	815	14	815	W	W
Gemstones	NA	1	NA	1	NA	1
Lime	1,640	107,000	1,530	105,000	1,510	103,000
Peat	11	294	4	166	3	126
Sand and gravel, construction	17,100	93,100	15,100	85,600	15,700	88,500
Stone:						
Crushed	80,900	492,000	87,400	518,000	89,200	536,000
Dimension metric tons	57,600	12,300	54,300	11,800	53,900	10,800
Combined value of other industrial minerals	XX	(6/)	XX	(6/)	XX	10,700
Total	XX	1,080,000 7/	XX	1,170,000 7/	XX	1,200,000
Rhode Island:						
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	2,790	21,500	1,990	13,300	1,960	15,700
Stone, crushed	1,250	9,140	1,440	9,680	1,830	11,500
Total 3/	XX	30,700	XX	23,000	XX	27,200
South Carolina:						
Cement:						
Masonry	W	W	286	27,100 e/	334	35,500 e/
Portland	2,210	156,000	2,370	186,000 e/	2,520	194,000 e/
Clays:						
Common	1,220	4,910	1,260	4,860	1,080	2,850
Fire	24	W	24	W	--	--
Kaolin	373	16,800	387	18,100	447	29,000
Gemstones	NA	W	NA	16	NA	1
Peat	W	W	--	--	--	--
Sand and gravel:						
Construction	8,880	29,000	8,780	29,000	8,130	30,400
Industrial	839	20,500	761	19,500	770	19,300
Stone, crushed	22,000	132,000	23,800	146,000	25,900	202,000
Combine value of gold, manganese ore (1995, 1997), mica (crude), silver, stone (dimension granite), vermiculite, and values indicated by symbol W	XX	88,700	XX	62,700	XX	54,200
Total	XX	447,000	XX	493,000	XX	567,000
South Dakota:						
Clay, common	136	W	147	W	182	W
Gemstones	NA	173	NA	98	NA	98
Gold 3/ kilograms	17,100	214,000	W	W	W	W
Gypsum, crude	--	--	W	W	51	469
Sand and gravel, construction	8,730	26,200	8,750	27,700	10,200	34,100
Silver 3/ metric tons	4	668	5	849 r/	4	694
Stone, crushed	5,420 5/	25,700 5/	5,640	28,700	5,900	30,200

See footnotes at end of table.

TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>South Dakota--Continued:</b>						
Combined value of cement, feldspar, iron ore (usable), lime, mica (crude), stone [crushed granite and miscellaneous (1995), dimension granite], and values indicated by symbol W	XX	65,300	XX	293,000 r/	XX	263,000
Total	XX	332,000	XX	351,000 r/	XX	328,000
<b>Tennessee:</b>						
Clays:						
Ball	663	29,000	679	29,000	659	27,400
Kaolin	1	W	32	W	W	W
Gemstones	NA	16,900	NA	12,900	NA	9,740
Sand and gravel:						
Construction	8,020	36,700	8,380	35,300	8,650	39,500
Industrial	918	14,700	747	13,900	898	16,500
Stone, crushed	52,600	286,000	55,100	305,000	60,400	349,000
Combined value of barite, cement, clays (common, fuller's earth), copper, lead, lime, silver, stone (dimension marble), zinc, and values indicated by symbol W	XX	282,000	XX	265,000 r/	XX	265,000
Total	XX	665,000	XX	661,000 r/	XX	707,000
<b>Texas:</b>						
Cement:						
Masonry	202	17,600	216	20,300 e/	203	18,900 e/
Portland	8,090	499,000	8,240	532,000 e/	8,280	576,000 e/
Clays:						
Ball	101	2,800	101	W	W	W
Common	2,320	15,500	2,290	15,000	2,150	13,600
Kaolin	36	7,700	28	W	35	7,600
Gemstones	NA	353	NA	511	NA	11
Gypsum, crude	1,880	16,200	2,240	12,100	2,260	15,700
Helium, crude million cubic meters	5	4,730	W	W	W	W
Lime	1,370	85,800	1,360	87,100 r/	1,470	91,500
Salt	9,110	85,000	9,700	88,900	9,780	91,000
Sand and gravel:						
Construction	61,100	271,000	61,300	278,000	60,100	284,000
Industrial	1,600	40,300	1,420	38,200	1,830	48,800
Stone:						
Crushed	81,100	310,000	86,500	341,000	81,200	347,000
Dimension metric tons	54,000	13,300	86,600	21,100	35,300	11,300
Talc and pyrophyllite do.	294,000	5,840	225,000	5,100	274,000	6,760
Combined value of clays [bentonite (1995, 1997), fuller's earth], helium (Grade-A), magnesium compounds, magnesium metal, sodium sulfate (natural), sulfur (Frasch), and values indicated by symbol W	XX	301,000	XX	293,000	XX	281,000
Total	XX	1,680,000	XX	1,730,000	XX	1,790,000
<b>Utah:</b>						
Beryllium concentrates metric tons	5,040	6	5,260	6	5,760	6
Clays:						
Bentonite	38	W	W	1,400	W	W
Common	386	4,280	298	4,510	299	4,510
Fuller's earth	--	--	W	32	W	W
Gemstones	NA	939	NA	1,150	NA	974
Iron ore, usable	144	1,700	--	--	--	--
Salt	2,160	54,800	1,720	70,400	1,670	69,000
Sand and gravel, construction	23,800	80,200	24,700	80,500	33,200	99,400
Stone, crushed	4,140	14,800	4,380	19,100	11,100	50,200

See footnotes at end of table.

TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
Utah--Continued:						
Combined value of cement [masonry (1995-96), portland], copper, gold, gypsum (crude), helium (Grade-A), lime, magnesium compounds, magnesium metal, mercury, molybdenum, phosphate rock, potash, silver, stone [dimension quartzite and sandstone (1995-96)], and values indicated by symbol W	XX	1,700,000	XX	1,570,000 r/	XX	1,450,000
Total	XX	1,850,000	XX	1,740,000 r/	XX	1,680,000
Vermont:						
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	3,220	11,000	3,870	15,200	3,890	15,800
Stone:						
Crushed	4,420	20,700	4,560	22,800	7,840	44,500
Dimension metric tons	100,000	28,700	99,600	27,900	105,000	23,200
Total 7/	XX	60,400	XX	66,000	XX	83,500
Virginia:						
Clays:						
Common	844	3,200	883	3,220	830	3,160
Fuller's earth	46	W	46	W	W	W
Gemstones	NA	W	NA	11	NA	W
Lime	731	41,900	766	45,700	818	49,300
Sand and gravel, construction	9,710	42,300	9,780	45,800	10,700	52,700
Stone, crushed	55,400	326,000	59,700	351,000	72,800	428,000
Combine value of cement, feldspar, gypsum (crude), iron oxide pigments (crude), kyanite, sand and gravel (industrial), stone [dimension dolomite, slate, and traprock (1995), dimension dolomite, granite, slate, and traprock (1996-97)], talc and pyrophyllite (1996-97), vermiculite, and values indicated by symbol W	XX	101,000	XX	103,000	XX	109,000
Total	XX	515,000	XX	549,000	XX	642,000
Washington:						
Cement, portland	W	W	1,160	78,900 e/	1,210	92,400 e/
Clays, common	220	1,040	218	1,070	165	715
Gemstones	NA	53	NA	36	NA	23
Gold 3/ kilograms	W	W	W	W	4,040	43,200
Gypsum, crude	--	--	W	W	12	549
Peat	2	87	W	W	W	W
Sand and gravel, construction	37,700	155,000	37,900	162,000	40,500	180,000
Silver 3/ metric tons	--	--	--	--	2	285
Stone, crushed	15,800 5/	76,800 5/	15,400	81,400	14,700	92,200
Combined value of cement (masonry), diatomite, lime, magnesium metal, olivine, sand and gravel (industrial), stone [crushed dolomite, limestone, and marble (1995), dimension miscellaneous], and values indicated by symbol W	XX	350,000	XX	221,000 r/	XX	146,000
Total	XX	582,000	XX	545,000 r/	XX	555,000
West Virginia:						
Clays, common	184	365	199	369	151	323
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	1,800	7,650	1,730	7,710	1,670	8,010
Stone, crushed 5/	11,800	75,000	12,700	78,400	12,900	76,700
Combined value of cement, lime, peat, salt, sand and gravel (industrial), and stone [crushed dolomite, dimension sandstone]	XX	97,700	XX	98,600	XX	120,000
Total	XX	181,000	XX	185,000	XX	205,000
Wisconsin:						
Gemstones	NA	65	NA	505	NA	5
Lime	568	33,900	551	32,000	597	35,100
Peat	W	W	W	W	5	256

See footnotes at end of table.

TABLE 5--Continued  
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
Wisconsin--Continued:						
Sand and gravel:						
Construction	32,200	102,000	32,600	105,000	33,500	110,000
Industrial	1,670	33,300	1,660	32,300	1,710	33,800
Stone:						
Crushed	26,000	108,000	26,000	113,000	28,700	120,000
Dimension metric tons	128,000	14,500	143,000	16,600	100,000	13,100
Combined value of copper, gold, silica stone, silver, and values indicated by symbol W	XX	124,000	XX	96,800	XX	46,600
Total	XX	416,000	XX	396,000	XX	358,000
Wyoming:						
Clays:						
Bentonite	2,940	89,900	3,030	98,400	3,340	140,000
Common	30	W	30	W	29	423
Gemstones	NA	11	NA	11	NA	11
Sand and gravel, construction	3,860	17,500	3,420	14,700	3,090	12,300
Stone, crushed	4,670	27,500	5,180	30,000	5,010	30,700
Combined value of cement (portland), gypsum (crude), helium (Grade-A), lime, soda ash, and values indicated by symbol W	XX	838,000	XX	935,000	XX	938,000
Total	XX	973,000	XX	1,080,000	XX	1,120,000
Undistributed:						
Alaska (1995), Connecticut (1996-97), Delaware, Hawaii (1995-96), Maryland (1995), New Hampshire, New Jersey, Pennsylvania (1995-96), Rhode Island, and Vermont	XX	123,000	XX	32,000 r/	XX	30,100

e/ Estimated. p/ Preliminary. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data, value included with "Combined value." XX Not applicable.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Recoverable content of ores, etc.

4/ Data collected by State.

5/ Excludes certain stones; kind and value included with "Combined value."

6/ Value excluded to avoid disclosing company proprietary data.

7/ Partial total, excludes values which must be concealed to avoid disclosing company proprietary data. Withheld values included with "Undistributed."

8/ Grindstones, pulpstones, and sharpening stones; excludes mill liners and grinding pebbles.

9/ Weight reported as B2O3 and is not comparable to prior years.

10/ Less than 1/2 unit.

11/ The Nickel Mountain Mine reportedly was idle all of 1997 because of low prices for nickel ore. However, the smelter operated at full capacity.

TABLE 6  
NONFUEL MINERAL PRODUCTION IN THE COMMONWEALTH OF PUERTO RICO AND ISLANDS ADMINISTERED BY  
THE UNITED STATES 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Puerto Rico:</b>						
Cement: Portland	metric tons	1,410	W	1,550	W	W
Clays: Common		W	W	W	W	363
Lime		23	2,970	38	5,050	32
Salt		--	--	45	1,500	45
Stone: Crushed		15,300	107,000	13,200	52,500	14,000
Combined value of other industrial minerals		XX	146,000	XX	153,000	XX
Total		XX	256,000	XX	212,000	XX
<b>Administered Islands:</b>						
American Samoa: Stone: Crushed		(3/)	(3/)	--	--	--
Guam: Stone: Crushed		2,060	17,400	1,660	13,800	1,760
Total		XX	17,400 4/	XX	13,800	XX

W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data. XX Not applicable.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Withheld to avoid disclosing company proprietary data.

4/ Total does not include values of items withheld.

TABLE 7  
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997		
	Quantity	Value	Quantity	Value	
<b>Metals:</b>					
<b>Aluminum:</b>					
Crude and semicrude	metric tons	1,500,000	3,420,000	1,570,000	3,760,000
Manufactures	do.	134,000	410,000	136,000	428,000
<b>Antimony:</b>					
Metal, alloys, waste and scrap	do.	462	1,760	652	2,280
Oxide, antimony content	do.	3,990	18,600	3,230	14,000
Arsenic metal	do.	36	954	61	1,780
<b>Bauxite and alumina:</b>					
Alumina, calcined equivalent		918	374,000	1,270	523,000
<b>Bauxite:</b>					
Calcined, refractory and other grade		40	7,830	21	4,350
Crude and dried		92	9,090	64	5,900
Beryllium, alloys, wrought or unwrought, waste and scrap	kilograms	56,700	4,510	40,300	5,400
Bismuth, metal, alloys, waste and scrap, bismuth content	do.	151,000	1,930	206,000	2,510
<b>Cadmium:</b>					
Metal	do.	201,000	1,030	554,000	1,250
Sulfide	do.	797,000	399	399,000	186
<b>Chromium:</b>					
Chemicals	metric tons	47,000	66,100	39,800	61,700
Chromite ore and concentrate	do.	69,400	11,100	18,500	4,200
Metals, alloys, and ferroalloys	do.	17,200	26,800	11,500	27,600
Pigments and preparations	do.	2,100	6,920	3,790	13,100
<b>Cobalt:</b>					
<b>Metal:</b>					
Unwrought, powders, waste and scrap, mattes and other intermediate products of metallurgy	do.	1,310	65,500	1,050	40,800
Wrought and cobalt articles	do.	529	23,500	759	36,600
Oxides and hydroxides	do.	346	10,200	548	15,000
Other forms, acetates and chlorides	do.	446	4,040	511	4,100
<b>Columbium (niobium) and tantalum:</b>					
<b>Columbium:</b>					
Ferrocolumbium	do.	254	1,490	59	588
Ores and concentrates	do.	11	185	32	349
<b>Tantalum:</b>					
Ores and concentrates, includes synthetic	do.	91	764	105	968
Unwrought, alloys, metal, powders, waste and scrap	do.	269	40,200	378	54,500
Wrought	do.	99	32,100	76	31,700
<b>Copper:</b>					
Scrap, alloyed and unalloyed	do.	392,000	616,000	379,000	592,000
Semimanufactures	do.	123,000	447,000	142,000	547,000
Unmanufactured, does not include unalloyed scrap, copper content	do.	424,000	750,000	309,000	566,000
<b>Ferroalloys not listed elsewhere:</b>					
Ferrophosphorous	do.	4,420	1,760	2,600	1,330
Ferrotitanium and ferrosilicon-titanium	do.	777	2,330	1,470	3,210
Ferrozirconium	do.	101	228	39	189
Ferroalloys, other	do.	2,970	6,080	3,680	6,100
<b>Gold:</b>					
Bullion, refined	kilograms	406,000	5,010,000	391,000	4,270,000
Doré and precipitates	do.	65,100	696,000	85,300	738,000
Ores and concentrates	do.	375	3,730	427	4,600
Waste and scrap	do.	89,900	853,000	60,500	538,000
<b>Iron and steel:</b>					
Cast iron and steel products		240	488,000	243	555,000
Fabricated steel products		964 r/	2,790,000 r/	1,140	3,240,000
Steel mill products		4,560	4,060,000	5,470	4,820,000

See footnotes at end of table.

TABLE 7--Continued  
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997	
	Quantity	Value	Quantity	Value
<b>Metals--Continued:</b>				
Iron and steel scrap:				
Ferrous, includes tinplate and ternplate, excludes used rails for rerolling and other uses, ships boats, other vessels for scrapping	8,440	1,340,000	8,930	1,350,000
Pig iron, all grades	58 r/	8,320 r/	86	12,300
Direct-reduced iron, steelmaking grade	3	304	8	852
Ships, boats, and other vessels for scrapping	24	2,710	39	4,580
Used rails for rerolling and other uses, includes mixed (new plus used) rails	21	6,900	43	17,200
Iron ore	6,260	232,000	6,340	235,000
Lead, lead content:				
Ash and residues metric tons	19,400	9,930	16,800	7,600
Base bullion do.	41,200	64,300	34,100	87,900
Ore and concentrate do.	59,700	17,400	42,200	16,600
Scrap, gross weight do.	85,300 2/	18,400	88,400	15,600
Unwrought lead and lead alloys do.	44,000 r/	39,600 r/	37,400	32,100
Wrought lead and lead alloys do.	16,700	40,600	15,900	45,800
Magnesium:				
Alloys, gross weight do.	6,970	25,900	9,180	33,200
Metal do.	17,000	57,300	17,100	47,300
Powder, sheets, tubing, ribbons, wire, other forms, gross weight do.	7,970	20,700	2,960	14,700
Waste and scrap do.	8,500	20,900	11,200	25,600
Manganese:				
Ferromanganese, all grades do.	9,800	8,850	11,800	9,270
Metal, including alloys, waste and scrap do.	5,840	14,500	7,890	18,700
Ore and concentrates with 20% or more manganese do.	31,600	4,000	84,300	7,390
Silicomanganese do.	5,270	4,390	5,360	3,290
Mercury and mercury-bearing waste and scrap do.	45	344	134	562
Molybdenum, molybdenum content:				
Ferromolybdenum do.	985	9,930	678	13,000
Ore and concentrates, including roasted and other do.	45,000	232,000	57,200	293,000
Oxides and hydroxides, gross weight do.	1,790	14,000	1,240	9,650
Molybdates, all do.	1,340	7,620	2,030	9,680
Powder, gross weight do.	210	8,260	262	6,790
Unwrought, gross weight do.	601	7,110	146	2,650
Wire, gross weight do.	174	12,300	181	12,200
Wrought, gross weight do.	185	11,000	164	8,650
Nickel, nickel content:				
Alloyed, gross weight do.	23,400 r/	336,000 r/	24,500	370,000
Unwrought:				
Primary, includes catalysts and salts, excludes carbonate do.	13,100	162,000	16,400	213,000
Secondary do.	33,600	290,000	40,200	290,000
Wrought do.	440	6,370	894	13,000
Platinum-group metals kilograms	48,800	334,000	81,200	576,000
Rare-earths, rare-earth oxide content:				
Cerium compounds do.	6,100,000	37,900	5,890,000	38,400
Ferrocerium and other pyrophoric alloys do.	4,970,000	21,100	4,310,000	16,900
Rare-earth compounds do.	2,210,000	15,500	1,660,000	17,700
Rare-earth metals, including scandium and yttrium do.	208,000	4,540	825,000	5,690
Selenium, metal, waste and scrap, selenium content do.	322,000	2,670	127,000	1,220
Silicon:				
Ferrosilicon metric tons	51,700	46,100	52,000	42,400
Metal do.	17,000	209,000	22,800	283,000
Silver, silver content:				
Bullion, refined kilograms	2,900,000	536,000	2,980,000	489,000
Doré and precipitates do.	43,300	8,030	65,500	15,700
Ores and concentrates do.	1,520	316	35,000	4,950
Waste and scrap, gross weight do.	1,280,000	236,000	1,020,000	209,000

See footnotes at end of table.

TABLE 7--Continued  
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997		
	Quantity	Value	Quantity	Value	
<b>Metals--Continued:</b>					
Thorium and thorium-bearing materials:					
Compounds	kilograms	58	14	241	144
Ore, monazite concentrate	do.	2,000	3	--	--
Tin:					
Ingots and pigs	metric tons	3,670	21,000	4,660	27,400
Tin scrap and other tin bearing material, except tinplate scrap, includes rods, profiles, wire, powders, flakes, tubes, pipes	do.	56,800	61,300	34,500	45,900
Tinplate and terneplate	do.	338,000	210,000	349,000	206,000
Titanium:					
Metal, sponge and scrap	do.	3,940	11,900	6,480	16,900
Ores and concentrates	do.	15,500	5,890	23,800	11,400
Other unwrought, billet, blooms, sheet bars, ingot, other	do.	4,290	84,300	4,740	111,000
Pigments, dioxide and oxides	do.	332,000	526,000 r/	405,000	576,000
Wrought, bars, rods, other	do.	4,530	203,000	5,200	269,000
Tungsten, tungsten content:					
Ammonium paratungstate	do.	150	1,310	121	1,210
Carbide powder	do.	1,290	32,000	1,070	28,200
Metal powders	do.	240	7,280	410	12,900
Miscellaneous tungsten-bearing materials, wrought, unwrought, waste and scrap, other tungsten metal, ferrotungsten, ferrosilicon tungsten, other compounds	do.	854 r/	29,000	976	35,600
Ore and concentrate	do.	72	539	40	282
Vanadium:					
Aluminum-vanadium master alloy, includes vanadium metal	kilograms	310,000	4,410	974,000	13,400
Ferrovandium, vanadium content	do.	479,000	8,830	446,000	9,780
Vanadium pentoxide, anhydride, vanadium content	do.	241,000	2,060	614,000	4,990
Other oxides and hydroxides of vanadium, vanadium content	do.	2,670,000	12,400	385,000	3,720
Zinc:					
Compounds, lithopone, chlorides, compounds n.s.p.f., oxide, sulfate, sulfide	metric tons	14,200	21,800	17,000	22,800
Ores and concentrates, zinc content	do.	425,000	190,000	461,000	326,000
Slab	do.	1,970	2,350	3,630	4,810
Rolled	do.	5,020	5,350	9,110	9,970
Zirconium:					
Ore and concentrates	do.	35,000	22,800	44,300	23,200
Oxide, includes germanium oxides and zirconium oxides	do.	1,480	10,900	1,970	14,500
Unwrought and waste and scrap	do.	136	3,550	139	2,840
Total		XX	26,200,000 r/	XX	27,600,000
<b>Industrial minerals:</b>					
Abrasives, manufactured:					
Boron carbide	metric tons	7	600	58	1,100
Fused aluminum oxide	do.	11,900	18,000	10,700	18,000
Metallic abrasives	do.	24,900	15,200	26,200	17,100
Silicon carbide	do.	14,200	15,600	16,100	15,400
Asbestos, includes reexports:					
Manufactured		XX	163,000	XX	197,000
Unmanufactured	metric tons	15,400	5,310	20,300	5,690
Barite, natural barium sulfate	do.	30,500	3,190	21,600	2,430
Boron:					
Boric acid		42	35,300	92	60,500
Sodium borates		381	133,000	473	169,000
Bromine:					
Compounds, contained bromine	metric tons	11,100 r/	22,100	9,050	21,200
Elemental	do.	2,920	3,970	2,330	3,590
Cement: Hydraulic and clinker		803	58,200	791	59,600
Clays:					
Ball		80	5,270	91	5,900
Bentonite		746	80,600	850	84,700
Fire		295	28,500	222	23,500

See footnotes at end of table.



TABLE 7--Continued  
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997		
	Quantity	Value	Quantity	Value	
<b>Industrial minerals--Continued:</b>					
Fuller's earth	112	13,200	144	16,100	
Kaolin	3,240	555,000	3,380	583,000	
Other, n.e.c., includes chamotte or dinas earth, activated clays and earths, artificially activated clays	364	142,000	390	147,000	
<b>Diamond, industrial (exports and reexports):</b>					
Industrial diamonds, unworked	thousand carats	3,260	26,600	3,590	29,500
Powder, dust and grit, natural and synthetic	do.	108,000	94,300	129,000	104,000
Diatomite		143	42,000	140	42,600
Feldspar	metric tons	10,200	1,390	7,220	993
Fluorspar	do.	61,600	8,110	62,100	8,330
Gemstones, includes reexports		XX	2,700,000	XX	2,800,000
Graphite, natural and artificial 3/	metric tons	92,500	68,000	119,000	74,300
<b>Gypsum and gypsum products:</b>					
Boards		80	22,800	78	24,100
Crude		136	6,120	174	10,100
Plasters		142	25,800	224	29,800
Other		XX	26,700	XX	25,700
Helium: Grade-A	million cubic meters	23	45,200	30	58,500
Iodine, crude/sublimed and potassium iodide	metric tons	2,410 r/	19,100	2,760	25,300
<b>Iron oxide pigments and hydroxides:</b>					
Pigment grade	do.	16,000	23,200	16,600	20,600
Other grade	do.	27,200	41,700	26,300	46,400
Lime		50	5,600	80	9,550
<b>Lithium chemicals:</b>					
Carbonate	metric tons	7,890	27,400 r/	5,030	18,300
Hydroxide	do.	4,390	18,900	5,680	24,200
<b>Magnesium compounds:</b>					
Compounds, chlorides, hydroxide and peroxide, sulfates	do.	27,600	12,000	23,200	12,600
<b>Magnesite, crude and processed:</b>					
Caustic-calcined magnesia	do.	19,600	6,770	4,700	2,230
Crude	do.	33,000	4,240	51,500	7,070
Dead-burned and fused magnesia	do.	72,600	27,500	66,200	30,300
Other magnesia	do.	16,600	12,500	21,700	13,900
<b>Mica:</b>					
<b>Scrap and flake:</b>					
Powder	do.	5,830	3,070	6,310	4,010
Waste	do.	1,710	495	1,820	471
<b>Sheet:</b>					
Unworked	do.	225	542	512	1,650
Worked	do.	606	10,700	565	11,700
Peat		19	1,990	22	2,400
Perlite, processed e/	metric tons	38,000	1,070	38,000	1,260
<b>Phosphate rock:</b>					
Elemental phosphorous	do.	12,600	25,500	8,800	18,000
Pumice and pumicite		13	6,300	12	7,200
Salt		869	39,300	748	38,000
<b>Sand and gravel:</b>					
<b>Construction:</b>					
Gravel		368	5,160	312	5,240
Sand		1,160	18,100	1,430	17,100
Industrial		1,430	113,000	980	134,000
<b>Silica:</b>					
Quartz crystal, cultured electronic- and optical-grade	metric tons	89	22,200	74	31,100
Tripoli and special silica, special silica stone products		NA	6,700	NA	6,030
Soda ash		3,840	508,000	4,190	547,000
Sodium sulfate		86	9,140	86	10,800
<b>Stone:</b>					
Crushed		3,270	36,300	4,090	42,700
Dimension		XX	49,500	XX	54,800

See footnotes at end of table.

TABLE 7--Continued  
 U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997		
	Quantity	Value	Quantity	Value	
<b>Industrial minerals--Continued:</b>					
Strontium compounds, precipitated carbonate, oxide, hydroxide, peroxide	kilograms	1,550,000	1,080	1,280,000	887
<b>Sulfur:</b>					
Elemental		855	51,700	703	36,000
Sulfuric acid, 100% H <sub>2</sub> SO <sub>4</sub>	metric tons	117,000	12,400	118,000	12,700
Talc, excludes talcum in (package), face, compact		192	37,900	179	34,200
Vermiculite e/		8	1,170	8	1,170
Wollastonite		4,080	1,020 e/	3,430	NA
Total		XX	5,530,000	XX	5,870,000
Grand total		XX	31,800,000 r/	XX	33,500,000

e/ Estimated. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes nonbattery scrap data only.

3/ Artificial graphite includes large amounts of materials made from petroleum coke.

TABLE 8  
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997		
	Quantity	Value	Quantity	Value	
<b>Metals:</b>					
<b>Aluminum:</b>					
Crude and semicrude	metric tons	2,810,000	4,790,000	3,080,000	5,590,000
Manufactures	do.	136,000	361,000	148,000	403,000
<b>Antimony:</b>					
Metal	do.	18,300	50,900	14,800	30,300
Ore and concentrate, antimony content	do.	1,000	2,880	1,300	2,800
Oxides, antimony content	do.	18,300	54,200	23,200	55,200
<b>Arsenic:</b>					
Acid	do.	1	14	117	86
Metal	do.	252	3,790	909	4,930
Trioxide	do.	28,000	13,400	30,000	14,300
<b>Bauxite and alumina:</b>					
Alumina, calcined equivalent		4,330	1,020,000	3,830	1,010,000
<b>Bauxite:</b>					
Calcined, refractory and other grade		352	28,100	370	34,000
Crude and dried		10,200	267,000	10,700	292,000
Beryllium, ore, metal, compounds	kilograms	78,900	2,530 r/	330,000	7,620
Bismuth, metallic	do.	1,490,000	11,500	2,170,000	15,200
<b>Cadmium:</b>					
Metal	do.	843,000	2,400	790,000	2,250
Sulfide	do.	13,600	156	40,100	375
<b>Chromium:</b>					
Chemicals	metric tons	14,700	28,900	14,500	30,900
Chromite ore	do.	250,000	23,200	303,000	22,500
Ferrochromium, metals, alloys	do.	478,000	384,000	438,000	365,000
Pigments and preparations based on chromium	do.	9,920	27,100	9,670	30,500
<b>Cobalt:</b>					
<b>Metal:</b>					
Alloys, articles, matte, wrought, waste and scrap	do.	804	27,000	812	26,200
Unwrought	do.	5,760	327,000	7,070	328,000
Oxide and hydroxides	do.	824	36,200	1,130	42,800
Other forms	do.	1,260 r/	14,800 r/	2,000	19,200
<b>Columbium (niobium) and tantalum:</b>					
<b>Columbium:</b>					
Ferrocolumbium	do.	4,570	42,100	6,550	59,600
Ores and concentrates	do.	224	1,700	129	884
Oxide	do.	901	16,300	1,750	30,700
Unwrought, alloys, metals, powder	do.	322	8,310	423	10,400
<b>Tantalum:</b>					
Ores and concentrates, includes synthetic	do.	1,160	27,500	934	22,500
Unwrought, alloys, metal, powders, waste and scrap	do.	471	63,500	376	58,000
Wrought	do.	11	2,820	24	6,190
<b>Copper:</b>					
Scrap, alloyed and unalloyed	do.	178,000	341,000	149,000	295,000
Semimanufactures	do.	138,000	439,000	152,000	481,000
Unmanufactured, does not include unalloyed scrap, copper conter	do.	782,000	1,800,000	820,000	1,930,000
<b>Ferroalloys not listed elsewhere:</b>					
Ferroalloys, other	do.	33,900	53,000 r/	37,700	57,500
Ferrophosphorus	do.	10,600	5,920	11,500	4,010
Ferrotitanium and ferrosilicon-titanium	do.	7,720	17,100	6,230	16,100
Ferrozirconium	do.	212	413	84	167
Gallium, unwrought, waste and scrap	kilograms	30,000	9,440	19,100	7,160
Germanium materials, gross weight	do.	27,500	30,800	23,700	36,500
<b>Gold:</b>					
Bullion, refined	do.	143,000	1,780,000	194,000	2,110,000
Doré and precipitates	do.	11,900	117,000	13,700	118,000
Ore and concentrates	do.	3,460	42,200	1,710	18,400

See footnotes at end of table.

TABLE 8--Continued  
 U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997	
	Quantity	Value	Quantity	Value
Metals--Continued:				
Gold--Continued:				
Waste and scrap kilograms	13,000	102,000	14,100	78,600
Indium, unwrought and waste and scrap do.	33,200	12,100	85,500	20,500
Iron and steel:				
Cast iron and steel products	332 r/	348,000 r/	375	386,000
Fabricated steel products	2,680	4,500,000	2,930	4,630,000
Stainless steel metric tons	791,000	2,090,000	819,000	1,790,000
Steel mill products	26,500	12,700,000	28,300	13,500,000
Iron and steel scrap:				
Ferrous, includes tinplate and ternplate, excludes used rails for rerolling, other uses, ships, boats, other vessels for scrapping	2,600	342,000	2,870	384,000
Pig iron, all grades	2,660 r/	411,000 r/	3,150	465,000
Direct-reduced iron, steelmaking grade	1,050	136,000	987	127,000
Ships, boats, and other vessels for scrapping	(2/)	90	(2/)	43
Used rails for rerolling and other uses, includes mixed (new plus used), rails	248	43,400	328	63,000
Iron ore	18,400	556,000	18,600	552,000
Lead, lead content:				
Base bullion metric tons	5	2	25	16
Ore and concentrates do.	6,570	2,500	17,800	6,830
Pigments and compounds, gross weight do.	43,800	56,600	41,800	60,100
Pigs and bars do.	268,000	214,000	265,000	179,000
Scrap, reclaimed, includes ash and residues do.	192	104	68	13
Wrought lead, all forms, including wire and powders, gross weight do.	10,000	16,500	7,310	14,400
Magnesium:				
Alloys, magnesium content do.	24,600	89,700	41,000	141,000
Metal do.	17,300	58,500	19,700	54,700
Powder, sheets, tubing, ribbons, wire, other forms, gross weight do.	1,280	6,470	510	2,930
Waste and scrap do.	3,340	7,660	3,990	6,700
Manganese, manganese content:				
Chemicals, manganese dioxide and potassium permanganate, gross weight do.	30,400	44,200	30,500	44,200
Ferromanganese, all grades do.	293,000	206,000	235,000	149,000
Metal, unwrought, waste and scrap, other, gross weight do.	11,300	19,700	14,700	24,600
Ore and concentrates with 20% or manganese, all grades do.	231,000	42,400	156,000	30,900
Silicomanganese do.	213,000	188,000	203,000	152,000
Mercury and mercury-bearing waste and scrap do.	340	1,800	164	704
Molybdenum, molybdenum content:				
Ferromolybdenum do.	4,960	54,300	3,640	36,700
Molybdates, all do.	404	5,720	612	7,900
Ore and concentrates, roasted and other do.	5,480	41,100	6,330	57,400
Oxides and hydroxides, gross weight do.	1,160	8,670	1,420	11,200
Powders do.	110	3,360	68	2,570
Unwrought do.	84	2,360	301	4,890
Wire, gross weight do.	2	309	4	475
Other, orange, mixtures of inorganic compounds, waste and scrap, other, gross weight do.	2,540	16,400	2,300	16,300
Nickel, nickel content:				
Alloyed, gross weight do.	10,200	148,000 r/	14,000	203,000
Unwrought:				
Primary, includes catalysts and salts, excludes carbonate do.	142,000	1,190,000	147,000	1,120,000
Secondary do.	8,060	63,800	11,000	87,300
Wrought do.	636	14,100	973	19,300
Platinum-group metals kilograms	256,000	1,770,000	258,000	2,000,000
Rare-earths, rare-earth oxide content:				
Cerium compounds, including oxides, hydroxides, nitrates, sulfate chlorides, oxalates do.	4,760,000	30,000	2,710,000	18,800

See footnotes at end of table.

TABLE 8--Continued  
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997	
	Quantity	Value	Quantity	Value
Metals--Continued:				
Rare-earths, rare-earth oxide content--Continued:				
Yttrium compounds content by weight greater than 19% but less than 85% oxide equivalent kilograms	42,200	1,030	48,400	1,550
Rare-earth compounds, including oxides, hydroxides, nitrates, other compounds except chlorides do.	15,300,000	67,600	9,420,000	69,000
Mixtures of rare-earth oxide except cerium oxide do.	879,000	21,900	938,000	17,700
Rare-earth metals, whether intermixed or alloyed do.	357,000	3,710	441,000	10,000
Mixtures of rare-earth chlorides, except cerium chloride do.	2,330,000	12,400	3,160,000	12,200
Ferrocerium and other pyrophoric alloys do.	120,000	1,980	136,000	2,070
Rhenium:				
Ammonium perrenate do.	10,000	3,440	6,560	1,760
Metal do.	10,800	9,500	8,510	7,640
Selenium and tellurium:				
Selenium, selenium content:				
Unwrought, and waste and scrap do.	412,000	5,500	333,000	5,220
Selenium dioxide do.	15,500 r/	234 r/	19,300	239
Tellurium, unwrought, waste and scrap, gross weight do.	73,700	3,190	63,900	2,110
Silicon, gross weight:				
Ferrosilicon metric tons	209,000	185,000	193,000	153,000
Metal do.	81,800	214,000	122,000	282,000
Silver, silver content:				
Bullion, refined kilograms	2,580,000	441,000	2,120,000	336,000
Doré and precipitates do.	281,000	96,300	285,000	80,700
Ore and concentrates do.	153,000	25,500	141,000	22,300
Waste and scrap, gross weight do.	1,810,000	52,500	1,530,000	76,100
Thallium, unwrought, waste and scrap, powders do.	166	23	168	46
Thorium:				
Compounds do.	26,400	1,440	13,500	574
Ore, monazite concentrate do.	101,000	41	20,000	8
Tin, gross weight:				
Compounds metric tons	354	3,120	389	3,210
Dross, skimmings, scrap, residues, tin alloys, n.s.p.f. do.	16,000	58,800	4,110	14,600
Metal, unwrought do.	30,200	187,000	40,600	228,000
Miscellaneous, includes tin foil, tin powder, flitters, metallics, manufactures, n.s.p.f. do.	NA	5,070	NA	5,890
Tinplate and ternplate do.	251,000	161,000	261,000	166,000
Tinplate scrap do.	64,600	5,690	34,300	5,120
Titanium:				
Concentrates:				
Ilmenite do.	518,000	34,600	522,000	37,200
Titanium slag do.	421,000	149,000	430,000	168,000
Rutile, natural and synthetic do.	324,000	119,000	336,000	145,000
Titaniferous iron ore do.	90,200	7,920	43,900	7,960
Pigments, dioxides and oxides do.	167,000	290,000	194,000	334,000
Metal:				
Unwrought:				
Ingots and billets do.	2,590	34,800	5,410	91,500
Other, includes blooms, sheet, bars, slabs, other unwrought do.	287 r/	4,130 r/	116	1,340
Powder do.	240	3,180	244	2,840
Sponge do.	10,100	70,800	16,100	122,000
Waste and scrap do.	16,400	82,100	10,700	49,100
Wrought products and castings, bars, castings, foil, pipes, plates, profiles, rods, sheet, strip, tubes, wire, other do.	6,210 r/	95,300	4,630	80,400
Tungsten, tungsten content:				
Ammonium paratungstate do.	1,580	10,600	2,100	13,700
Ferrotungsten and ferrosilicon tungsten do.	535	3,410	803	4,440

See footnotes at end of table.

TABLE 8--Continued  
 U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997		
	Quantity	Value	Quantity	Value	
<b>Metals--Continued:</b>					
<b>Tungsten, tungsten content--Continued:</b>					
Miscellaneous tungsten-bearing materials, waste and scrap, metal powders, unwrought, wrought wire, plate, sheet, strip, foil and other, calcium tungstate, oxides, chlorides, other tungstates, and carbide powder	metric tons	5,460	69,100	5,070	72,800
Ore and concentrate	do.	4,190	21,500	4,850	24,300
<b>Vanadium, vanadium content:</b>					
Aluminum-vanadium master alloy, gross weight	kilograms	1,610	17 r/	11,300	20
Ferrovandium	do.	1,880,000	28,300	1,840,000	32,400
Pentoxide, anhydride	do.	485,000	6,150	711,000	9,310
Other oxides and hydroxides of vanadium	do.	10,800	205	126,000	1,870
Metal, including waste and scrap	do.	96,100	811	564,000	1,470
Vanadium-bearing materials, ash and residues, and slag from the manufacture of iron and steel, vanadium pentoxide content	do.	4,060,000	9,480	5,260,000	12,000
Miscellaneous chemicals, sulfates, vanadates, hydrides, nitrides	do.	332,000	5,280	150,000	1,140
<b>Zinc:</b>					
Compounds, lithopone, chlorides, compounds n.s.p.f., oxide, sulfate, sulfide	metric tons	65,600	69,000	73,600	83,300
Ore and concentrates, zinc content	do.	15,100	6,380	49,600	31,400
Refined slab	do.	827,000	882,000	876,000	1,190,000
Rolled	do.	16,900	18,200	19,200	25,300
<b>Zirconium and hafnium:</b>					
Hafnium, unwrought, waste and scrap	do.	8	1,580	7	1,290
Zirconium, ore and concentrates	do.	92,500	36,200	62,400	27,800
Zirconium oxide, includes germanium oxides and zirconium oxides	do.	5,240	48,300	4,220	44,600
Zirconium, unwrought waste and scrap	do.	619	37,800	688	30,700
Total		XX	41,500,000 r/	XX	44,200,000
<b>Industrial minerals:</b>					
<b>Abrasives, manufactured:</b>					
Boron carbide	metric tons	196	4,700	232	5,800
Fused aluminum oxide	do.	130,000	72,700	138,000	75,300
Metallic abrasives	do.	20,200	12,200	23,400	12,400
Silicon carbide	do.	181,000	94,000	240,000	103,000
Asbestos, unmanufactured	do.	21,600	4,880	20,900	4,660
<b>Barite:</b>					
Barium chemicals	do.	41,200	34,800	47,000	38,000
Crude and ground	do.	1,540,000	81,900	2,240,000	122,000
<b>Boron, contained boric oxide:</b>					
Borax		11	3,470	54	17,000
Boric acid		25 r/	10,800 e/	26	11,800 e/
Colemanite		44	13,000 e/	44	13,000 e/
Ulexite		136	27,200	157	31,400
<b>Bromine:</b>					
Compounds, contained bromine	metric tons	16,700 r/	32,300 r/	13,700	49,700
Elemental	do.	415	305	1,650	1,200
Cement, hydraulic and clinker		14,200	592,000	17,600	752,000
<b>Clays:</b>					
Artificially activated clay and activated earth	metric tons	18,600	11,000	18,600	10,300
Bentonite	do.	7,510	1,760	7,560	2,810
Chamotte or dina's earth	do.	39	37	33	14
China clay or kaolin	do.	13,700	5,840	30,400	7,270
Common blue clay and other ball clay	do.	1,400	337	823	261
Decolorizing earths and fuller's earth	do.	368	159	3,530	473
Fire clay	do.	355	230	69	79
Other clay	do.	2,520	1,600	2,720	2,040
<b>Diamond, industrial:</b>					
Diamond stones, natural and miners'	thousand carats	2,860	21,500	2,790	21,500
Powder, dust and grit, natural and synthetic	do.	218,000	98,900	254,000	109,000

See footnotes at end of table.

TABLE 8--Continued  
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997		
	Quantity	Value	Quantity	Value	
Industrial minerals--Continued:					
Diatomite	metric tons	1,550	1,680	2,040	568
Feldspar and nepheline syenite:					
Feldspar	do.	7,150	594	8,580	753
Nepheline syenite	do.	247,000	20,900	346,000	23,900
Fluorspar:					
Aluminum fluoride	do.	18,300	16,800	12,800	12,000
Cryolite	do.	6,400	6,510	9,270	7,150
Fluorspar	do.	513,000	70,900	536,000	69,500
Hydrofluoric acid, HF	do.	82,300	78,800	109,000	110,000
Gemstones, includes synthetics and simulants		XX	7,240,000	XX	8,380,000
Graphite:					
Natural	metric tons	53,400	28,600	58,100	32,400
Electric furnace electrodes	do.	59,300	135,000	70,200	174,000
Gypsum:					
Boards		748	89,300	847	113,000
Crude		8,050	62,500	8,420	72,900
Plasters		11	2,220	9	2,100
Other		XX	42,400	XX	41,200
Helium, Grade-A	million cubic meters	--	--	(2/)	276
Iodine, crude and potassium iodide	metric tons	4,860	62,300	6,380	94,100
Iron oxide pigments:					
Natural	do.	9,390	3,370	10,100	4,490
Synthetic	do.	53,200	70,600	60,400	72,400
Kyanite and related materials, andalusite	do.	11,300	2,310	8,170	1,680
Lime		262	19,400	274	26,500
Lithium chemicals:					
Carbonate	metric tons	4,590	12,500	5,090	10,200
Hydroxide	do.	126	1,440	113	682
Magnesium compounds:					
Compounds, chlorides, hydroxide, peroxide, sulfates	do.	64,700	18,600	52,700	19,200
Magnesite, crude and processed:					
Caustic-calcined magnesia	do.	114,000	19,200	133,000	19,800
Crude	do.	9,190	1,900	10,900	2,580
Dead-burned and fused magnesia	do.	271,000	57,600	279,000	51,900
Other magnesia	do.	11,900	9,040	17,700	13,500
Mica:					
Scrap and flake:					
Powder	do.	13,600	8,250	13,000	8,080
Waste	do.	4,840	1,230	10,200	2,260
Sheet:					
Unworked	do.	5,240	2,310	4,220	2,310
Worked	do.	1,090	10,800	1,540	12,300
Nitrogen, major compounds, gross weight		9,630 r/	1,730,000 r/	9,720	1,590,000
Peat moss		667,000	116,000	754,000	133,000
Perlite, processed	metric tons	125,000	3,530	135,000	4,460
Phosphate rock and phosphatic materials		841	87,300	1,130	93,000
Potash:					
Potassium chloride	metric tons	8,030,000	539,000	8,940,000	590,000
Potassium nitrate	do.	30,400	8,690	19,200	5,430
Potassium sodium nitrate mixtures	do.	21,900	3,430	19,900	3,060
Potassium sulfate	do.	60,400	11,300	56,300	11,400
Pumice:					
Crude or unmanufactured		215	16,000	265	19,300
Wholly or partially manufactured		(2/)	708	(2/)	1,250
Salt		10,600	167,000	9,160	148,000
Sand and gravel:					
Construction		1,260	15,800	1,610	18,100
Industrial		7	1,500	39	3,200

See footnotes at end of table.

TABLE 8--Continued  
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1996		1997		
	Quantity	Value	Quantity	Value	
<b>Industrial minerals--Continued:</b>					
Silica:					
Quartz crystal, cultured electronic- and optical-grade	metric tons	42	9,480	63	11,700
Tripoli and special silica, special silica stone products	do.	NA	2,960	NA	3,090
Soda ash		107	14,700	101	13,400
Sodium sulfate		177 r/	17,100 r/	150	15,600
Stone:					
Crushed, chips, calcium carbonate fines		11,300	91,800	12,400	106,000
Dimension		NA	462,000	NA	548,000
Strontium:					
Compounds, carbonate and nitrate	metric tons	34,400	21,200	44,000	28,100
Sulfate, celestite	do.	26,400	1,770	28,500	2,050
Sulfur:					
Elemental		1,960 r/	70,200 r/	2,060	64,900
Sulfuric acid, 100% H <sub>2</sub> SO <sub>4</sub>	metric tons	2,070,000	78,000	2,010,000	84,000
Talc, unmanufactured		187	20,500	123	21,100
Vermiculite e/		48	6,240	67	11,800
Wollastonite		1,380	276 e/	1,720	NA
Total		XX	12,700,000 r/	XX	14,300,000
Grand total		XX	54,200,000 r/	XX	58,500,000

e/ Estimated. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.



TABLE 9  
COMPARISON OF WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Mineral or Product	1996			1997			
	World r/	U.S.	U.S. percent of World	World e/	U.S.	U.S. percent of World e/	
<b>Metals, mine basis:</b>							
Antimony 2/	metric tons	155,000	242 r/	0.2 r/	148,000	356	0.2
Arsenic trioxide	do.	43,200	--	--	40,600	--	--
Bauxite 3/		120,000	W	NA	123,000	NA	NA
Beryl 4/	metric tons	6,400	5,260	82.1 r/	6,910	5,770 e/	83.5
Chromite		11,900	--	--	12,600	--	--
Cobalt 2/ 4/	metric tons	26,800	--	--	27,000	--	--
Columbium-tantalum concentrate, gross weight 4/							
	do.	48,600 e/	--	--	49,600	--	--
Copper 2/		11,000	1,920 r/	17.5 r/	11,400	1,940	17.0
Gold 2/	kilograms	2,310,000	326,000 r/	14.1	2,420,000	360,000	14.9
Iron ore, gross weight		1,020,000	62,100 r/	6.1	1,040,000	63,000	6.1
Lead 2/		3,090	436	14.1 r/	3,010	459	15.3
Manganese ore, gross weight		24,100	--	--	22,700	--	--
Mercury	metric tons	2,580	W	NA	2,730	W	NA
Molybdenum 2/	do.	133,000	54,900	41.4 r/	140,000	60,300 e/	43.2
Nickel 2/	do.	1,070,000	1,330	0.1	1,120,000	--	--
Platinum-group metals	kilograms	283,000	7,940 e/	2.8	288,000	11,000 e/	3.8
Silver 2/	metric tons	15,200	1,570 r/	10.3	16,400	2,150	13.1
Tin 2/	do.	208,000	--	--	211,000	--	--
Titanium concentrates, gross weight:							
Ilmenite, including leucoxene	do.	3,930,000	W	NA	4,020,000	W	NA
Rutile	do.	365,000	W	NA	415,000	W	NA
Tungsten 2/	do.	35,100	W	NA	33,400	W	NA
Vanadium 2/	do.	45,800	3,730	8.2 r/	NA	NA	NA
Zinc 2/		7,490	628	8.4	7,460	632	8.5
<b>Metals, refinery basis:</b>							
Aluminum		20,800	3,580	17.2	21,400	3,600	16.8
Bismuth	metric tons	4,340	W	NA	4,400	W	NA
Cadmium	do.	19,200	1,530	7.9	18,900	2,060	10.9
Cobalt	do.	25,200	--	--	25,700	--	--
Copper, primary and secondary		12,600	2,340 r/	18.5	13,500	2,450	18.1
Iron and steel:							
Direct-reduced iron		32,700	450	1.4	33,500	510	1.5
Iron, pig		529,000	49,400	9.3	549,000	49,600	9.0
Steel, raw		756,000	95,500 r/	12.6 r/	800,000	98,500	12.3
Lead, primary and secondary 5/		5,690	1,400 r/	24.6 r/	5,760	1,450	25.2
Magnesium, primary and secondary	metric tons	468,000	203,000 r/	43.5 r/	498,000	205,000	41.2
Nickel 6/	do.	949,000	15,100	1.6	1,010,000	16,000	1.6
Selenium 7/	kilograms	2,250,000	379,000	16.8 r/	1,990,000	353,000	17.7
Tellurium	do.	122,000	W	NA	88,600	W	NA
Tin, smelter 8/	metric tons	229,000	11,600 r/	5.1	213,000	12,300	5.8
Zinc, smelter, primary and secondary	do.	7,560,000	366,000	4.8	7,740,000	367,000	4.7
<b>Industrial minerals:</b>							
Asbestos		2,180	10	0.5 r/	2,070	7	0.3
Barite		6,330	662 9/	10.5 r/	6,930	692 9/	10.0
Boron minerals		3,160	1,150 9/	36.4 r/	3,070	1,190 9/	38.8
Bromine	metric tons	444,000	227,000 9/	51.1 r/	468,000	247,000 9/	52.8
Celestite 4/	do.	306,000	--	--	306,000	--	--
Cement, hydraulic		1,490,000	80,800 10/	5.4	1,520,000	84,300 10/	5.6
Clays:							
Bentonite 4/		9,420	3,730 r/	39.7 r/	9,680	4,020	41.6
Fuller's earth		3,690	2,600	70.5	3,450	2,370	68.8
Kaolin 4/		38,600	9,120	23.6	39,600	9,410	23.8
Diamond, natural	thousand carats	117,000	--	--	110,000	--	--
Diatomite		1,480	729 r/ 9/	49.2 r/	1,500	773 9/	51.4

See footnotes at end of table.

TABLE 9--Continued  
COMPARISON OF WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Mineral or Product	1996			1997		
	World r/	U.S.	U.S. percent of World	World e/	U.S.	U.S. percent of World e/
<b>Industrial minerals -- continued:</b>						
Feldspar	8,080	890	11.0 r/	8,050	900	11.2
Fluorspar	4,350	8 e/ 11/	0.2	4,610	-- 11/	--
Graphite, natural	metric tons 561,000	--	--	575,000	--	--
Gypsum	103,000	17,500	17.0 r/	104,000	18,500	17.7
Iodine, crude	metric tons 15,600	1,270	8.2 r/	15,500	1,320	8.5
Lime 10/	120,000	19,100 9/	16.0	120,000	19,700 9/	16.4
Magnesite, crude	10,700	W	NA	10,500	W	NA
Mica, including scrap and flake 12/	metric tons 302,000	96,600 r/	32.0 r/	315,000	114,000	36.1
Nitrogen: N content of ammonia	102,000	13,200 r/ 13/	12.9 r/	102,000	14,300 13/	14.0
Peat 14/	26,200	549	2.1	26,000	660	2.5
Perlite 4/	metric tons 1,810,000	684,000 9/	37.8 r/	1,840,000	706,000 9/	38.3
Phosphate rock, gross weight	135,000	45,400	33.5 r/	135,000	43,300	32.1
Potash, K <sub>2</sub> O equivalent	23,400	1,390	5.9	25,700	1,380	5.4
Pumice 15/	11,400	612 9/	5.4 r/	11,200	577 9/	5.1
Salt 10/	201,000	42,300	21.0 r/	196,000	36,500	18.7
Sand and gravel, industrial, silica 4/	119,000	27,800 9/	23.3 r/	119,000	28,700 9/	24.2
<b>Sodium compounds, n.e.s., natural and manufactured:</b>						
Soda ash 16/	30,900	10,200	32.9	32,100	10,700	33.5
Sulfate	5,370	602 r/	11.2	5,520	580	10.5
Sulfur, all forms	53,400	11,800 r/ e/	22.1 r/	53,600	12,000	22.4
Talc and pyrophyllite 17/	8,470	994	11.7	8,470	1,050	12.4
Vermiculite	metric tons 265,000	W	NA	280,000	W	NA

e/ Estimated. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to three significant digits.

2/ Content of ore and concentrate.

3/ U.S. figures represent dried bauxite equivalent of crude ore; to the extent possible, individual country figures that are included in the world total are also on the dried bauxite basis, but for some countries available data are insufficient to permit this adjustment.

4/ World total does not include an estimate for output in China.

5/ Includes bullion.

6/ Refined nickel plus nickel content of ferronickel, nickel oxide, and other nickel salts.

7/ U.S. production includes semirefined selenium exported for further refining.

8/ Includes tin content of alloys made directly from ore.

9/ Quantity sold or used by producers.

10/ Data for the United States include Puerto Rico.

11/ Shipments.

12/ Excludes U.S. production of low-quality sericite and sheet mica, if any.

13/ Synthetic anhydrous ammonia; excludes coke oven byproduct ammonia.

14/ Data for the United States exclude proprietary amounts of fuel peat.

15/ World total does not include estimates for output in Japan, Mexico, the former U.S.S.R., and Congo (Kinshasa), formerly Zaire.

16/ U.S. production is natural only.

17/ Data for the United States exclude proprietary pyrophyllite production data.